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ORIGINAL ARTICLES

THE CHARITABLE AND PENAL INSTITUTIONS OF ILLINOIS.*

HON. C. S. DENEEN.

GOVERNOR OF THE STATE OF ILLINOIS.

I am glad to avail myself of the opportunity afforded by your invitation to address you on the subject of our state institutions. I think the manifestation of intelligent public interest furnishes the best incentive to improvement in the administration of every form of governmental enterprise, and, though the subject is a large one, I hope to present at least a general view of the present condition of our state institutions, with some suggestions as to their future management. I shall confine my remarks to the subject of the charitable and penal institutions of the state, and shall deal first with the state hospitals for the insane. Their present condition can not be understood without some allusion to the general subject of the care of the insane and the treatment afforded these unfortunates in an earlier day.

In the early history of our state, the subject of the care of the insane received but little attention. As late as 1869 there were only three or four charitable institutions in Illinois, an insane asylum containing fewer than 500 patients, a small school for the deaf and another for the blind, and a school for the feeble-minded, located in a rented house in Jacksonville. In general, however, the insane were cared for either by the family or by the county in the county almshouse or jail, and the conditions prevailing were in many instances wretched. No special provision was to be found in these almshouses for the humane treatment of insane patients, and practically all which was attempted was their safe-keeping in a state of imprisonment. In the year named, the State Board of Charities was organized and undertook to investigate the condition of the insane in Illinois. Under the law then enacted a Board of Visitation was selected to visit the state institutions and other places where the

^{*} Delivered before the Methodist Social Union, at the Auditorium Hotel, Chicago, Nov. 23, 1905.

insane might be found, including the county almshouses and jails. These were found to be in a very bad condition. Some of the jails had dungeons under ground, entered by trap-doors from above, and were insanitary, filthy and badly overcrowded. In some, insane people were found chained to the floor and to the walls; in others the insane were disciplined by flogging. The reports of the Board of Visitation aeeelerated the movement for better treatment of insanity and secured much improved conditions. The state, however, had already taken steps to enlarge the capacity of the state institutions and had made appropriations for the building of two new hospitals, one at Elgin in the northern and one at Anna in the southern part of the state. The object with which these new institutions were built was to relieve the county almshouses of the eare and custody of the insane, a work for which, as has been shown by the reports of the Visitation Board, they were so ill-fitted. A rapid improvement of conditions followed, which has resulted in the establishment of the extensive system of insane asylums possessed by Illinois to-day.

Some idea of the magnitude of the work at present done by our state hospitals for the insane may be gathered from the statistics showing the appropriations made for their support; the buildings and their equipment, for the eare and comfort of the inmates; the number and elasses of patients treated, the character of the service rendered by the small army of physicians, nurses and attendants, and their general conduct, financial and administrative, by their management. In Illinois we have seven hospitals for the insane. For their maintenance and extension the General Assembly, at its last session, appropriated for the years 1905 and 1906 the sum of \$2,958,170, which was apportioned to the different institutions as follows:

Northern Hospital for the Insane, Elgin: For current expenses
For enosial nurnoses ' 50.870.00
For special purposes 50,870.00
Eastern Hospital for the Insane, Kankakee:
For current expenses
For special purposes
Central Hospital for the Insane, Jacksonville:
For current expenses\$370,000.00
For special purposes
Southern Hospital for the Insane, Anna:
For current expenses
For special purposes
Western Hospital for the Insane, Watertown:
For current expenses\$315,000.00
For special purposes
Asylum for the Incurable Insane, Bartonville;
For current expenses
For special purposes
Asylum for Insane Criminals, Menard:
For current expenses
For special purposes

Impressive as are the figures showing the appropriations made, the work undertaken is equally impressive. The total number of inmates in these institutions on Oet. 23, 1905, was 9,639, who were cared for by employes, including physicians, nurses and attendants. The patients included every class and condition, varying in the age at which insanity began from one year to ninety-one years, with a noticeable increase in number between the ages of 30 and 40 years. Another noticeable feature

shown by the statistics of these institutions is the rapidly falling percentage of recoveries which accompanies delay in bringing patients to the hospital for treatment. The maximum of recoveries was found in those who have been placed in hospitals within six months of the first attack of insanity and, among these, patients reach the high mark of 91 per cent. Patients placed in institutions after eighteen months to two years of insanity show a very low percentage of recoveries, the records of some of the hospitals showing no recoveries in such cases. The comparatively high percentage of cures effected in cases submitted to hospital treatment soon after the first attack of insanity emphasizes the danger of delay. This consideration prompts me to refer to the prejudice which has heretofore existed against the placing of people in insane asylums, a prejudice which is happily disappearing and which, under present conditions, has no sound foundation. The regime of the present-day hospital for the insane is the best that can be devised. The state has entered on this work with a broad conception of its duty to those who labor under this terrible misfortune, and is seeking to provide and sceure the best treatment obtainable. The highly sanitary condition of these institutions is beyond question, while the regularity of life, the wholesome food, the freedom from harassment which obtains, form the very best environment for the cure of insanity. Everything possible is done to divert the mind of the patient, still capable of taking an interest in his surroundings, from the contemplation of his unhappy condition. The devices in use for this purpose are almost endless—theaters, dances, games of all kinds, including billiards, music, etc., as the institutions are well provided with pianos and many have orchestras. Even outings are provided, and under the care of attendants 80 of the incurable in one of our principal asylums attended Ringling's circus this year, traveling by street car seven miles and changing cars. Four patients were in the same way entertained at a circus which had come to town.

The greatest care is taken to prevent abuses. Even in the case of violent patients, the Illinois law provides that "No patient shall be placed in restraint or seclusion in any hospital or asylum for the insanc in the state, except by the order of the physician in charge"; and every instance of restraint is recorded, with the reasons therefor, in a book which is open to the inspection of the State Commissioners of Public Charities, the relatives and the public. The motto which governs the modern treatment of the insane is "Sane surroundings for the insane." Kindliness on the part of attendants is enforced, and in every way the condition of patients is made as comfortable as possible. In some of the institutions, training schools for attendants are maintained, and I have urged their establishment in all. It is now insisted that the chief nurse in every hospital for the insane should be a graduate nurse in her profession, making possible a better differentiation of the duties of nurse and doctor, resulting in improved service for the patients and relieving the nurses and doctors, respectively, of much of the work they are at present called on to do. I am confident that the application of civil service principles to the administration of our charitable institutions will result in

the betterment of the service. A higher class of employés will be attracted to this service when it is realized that such positions are independent of political vicissitudes and that the employé can not be subjected to political assessments. I think I need not say to this audience that contributions for political purposes have not been levied on employés by this administration nor will any be permitted.

I have spoken of the highly sanitary condition of the Illinois hospitals for the insane. This fact is, perhaps, best shown by the absence of epidemics. In the typhoid epidemic which raged a few years ago, I am told that 35 out of 200 young college students died in one of our large eastern universities. At one of our hospitals for the insane, with a population of 700 to 800, there were but 9 cases, and not one patient died. This result may be attributed to the extreme precaution taken at the time the epidemic prevailed. In the same way, prevention of exposure of the patients keeps the asylums free from pneumonia. The proper season is chosen for out-of-door exercise, and the patients returned indoors immediately after the exercise is concluded.

The advancement in the treatment of the insame which the state has made over that accomplished by the counties brings me to the consideration of the cases in which patients are still liable to be returned to the county almshouses, a condition which, in my opinion, should be remedied as soon as practicable. Under the present law each county is permitted to send to the State Hospital for the Insane a certain quota, determined by population. It is estimated that there are about 600 insane patients in county almshouses outside of Dunning. By provision of the law it is also the duty of the state institutions to receive recent cases, and, when the county quota is full, to return an equal number of chronic cases to make room for them. This condition should be and I believe will be remedied. Even at the present time the condition of our poorhouses is reported by the State Board of Charities to be anything but first class; in twenty-five cases, the condition is reported as bad; in fifty, moderate, and in twenty-five, good.

There are other and more personal phases of the life of the patients in hospitals for the insane which may be of interest to you. Some of these are pathetic. An instance of this is found in the waning interest of relatives in a patient who evidences no improvement. At first, visits, letters, presents, are frequent, but as time passes these gradually diminish until, at last, they cease entirely, and when the patient dies the hospital authorities are, in many instances, obliged to correspond with the county clerk to get a trace of the relatives. I may say, however, for the honor of humanity, that a mother's love has never been known to die, and until the death of the mother the patient is sure of at least one visitor or correspondent.

But I have already devoted too much of the time at my disposal to the consideration of the insane, and must hurry on to the consideration of other institutions. The state has an asylum for feeble-minded children at Lincoln, the first institution of its kind west of the Alleghanies. This institution has 14 detached buildings, and at the present time 1,439 patients. It has a working force of 170 employés. The inmates are divided into two elasses: those who are susceptible of improvement, known as high-grade children, and those who are not. The former receive instructions, the latter custodian carc. The high-grade children are taught the common branches, reading, writing, and arithmetic. For the support of this institution, our General Assembly, at its last session, appropriated \$406,000 for current expenses for 1905 and 1906, and for special purposes \$60,000. More room is needed, and an appropriation of \$35,000 was made by the last General Assembly for two additional buildings and furniture. Besides the education already referred to, the institution furnishes manual training and maintains a brush factory and shoe factory, operated, under direction, by the children. There is also a farm, on which 100 of the boys are employed in farm, garden and dairy work.

Other eharitable institutions maintained by the state are the Illinois Sehool for the Blind at Jaeksonville and the Illinois Industrial Home for the Blind at Chicago. The last legislative appropriation for the maintenance of the former was \$108,000, and for special purposes, \$20,500. In this institution there were enrolled 291 during the period ending June 30, 1904. Of these, 43 were adult males, admitted as apprentices in the shop department; 3 were adult females, admitted to the workrooms, the remainder being pupils in the school proper, numbering 139 boys and 106 girls. This sehool is conducted by 23 instructors, four of whom are blind. The grades eorrespond as nearly as may be to the grades in the public schools. There is also a course of 3 years' work in the high school. The branches taught include reading, spelling, language work, arithmetic. geography, history, and writing in Braille, a system of writing by a series of dots so arranged as to represent letters and which is much more readily read and written than the old raised-letter system. In the high school, the pupils are taught algebra, geometry, general history, rhetorie, English and American literature, physies, physiology, eivics and modern history. Other departments meet the peculiar needs of the blind. There are departments devoted to instruction in music, industrial training, piano tuning, typewriting, printing, physical culture, and kindergarten work. The results which are accomplished in special eases are extraordinary. The American public is familiar with the story of Helen Keller, but it may not be so well known that we have at least one case in our state which gives promise of as remarkable progress. The case is that of Emma Kubicek. This little girl, who was deaf, dumb and blind, came to the institution when about 6 years of age, having been sightless from her third year. She was unable to express a single want, in many respects she was more like an untamed animal than a human being. Under the guidance of her instructor, Mrs. Helen R. Jordan, who has charge of the kindergarten department, this little girl has made marvelous advancement, and it is believed that she will not only learn to write rapidly and easily on the typewriter for the blind, but to speak orally instead of with the fingers.

The Industrial Home for the Blind, located in Chicago, is designed

to furnish employment to these unfortunate members of society. Under the system of employment and instruction there given, the blind have been enabled to make themselves self-supporting and in some instances to support their families either wholly or in part. For the maintenance of this institution, our last General Assembly appropriated \$70,000. According to its last report, the home contained 57 men and 17 women inmates, also 12 outmates, who are married men with families depending on them for support. The work carried on in this institution is that of broom-making, and, during the year 1904, 19,642 dozen brooms were manufactured. The home is taxed to its utmost capacity, and larger provisions should be made for the accommodation of the many additional blind persons who have filed applications for admission.

A kindred Illinois institution is the Illinois School for the Deaf, located at Jacksonville. This institution has been in operation about 65 years. I think one of the principal and certainly most agreeable steps in the advancement there made has been the introduction of instruction for the deaf in oral speech. So much has been accomplished in this regard that the old name of the institution, "Illinois Institution for the Education of the Deaf and Dumb," has become a misnomer, and was changed by the General Assembly, in 1903, to "Illinois School for the Deaf." In this connection an experience of my own may prove interesting. During my campaign for the governorship I addressed an audience of the deaf at Masonic Temple. On entering I was introduced by the teacher, who stated that I might now begin my address, which she would translate to my audience. I began in a slow, hesitating manner. teacher urged me to speak as rapidly as was my custom, as she could translate at any speed desired. The result was that I delivered a regular campaign speech, exactly as to an ordinary audience, and was astonished to perceive, through the expression on the faces of my auditors and the occasional applause, that I was thoroughly understood. Instruction, however, is given in both oral and manual methods of speech, as seems best adapted to the particular case, and two departments of instruction are maintained. In both good results are obtained and the standard of education is very high. The course of study adopted covers the same range as that in the ordinary primary, intermediate and grammar schools of the state. Instruction is also given in mechanical arts and industries and in the elements of the fine arts, so that graduated pupils are in nearly every instance capable of self-support. Pupils who have been accepted as members of the school are entitled to board, washing, tuition, school books and ordinary medical treatment, free of charge during their stay; parents, guardians or friends being required to make provision for clothing and incidental expenses. The rule is relaxed in the case of accepted pupils who are too poor to pay for clothing or transportation to the institution. In such cases, application may be made to the county judge, and, on his order, the pupil is received and maintained at the expense of the county. The institution has now 450 inmates, and for its support the last General Assembly appropriated for maintenance \$230,- 000, and for special purposes \$40,000. The per capita cost for the maintenance of pupils is \$230.86.

Another charitable institution of our state which is accomplishing valuable work is the Illinois Eye and Ear Infirmary, located at Chicago. The work done by this institution is purely charitable and is accomplished largely through the unselfish efforts of those who contribute their services free of charge. The last report of this institution, for the two years ending June 30, 1904, shows that the number of physicians thus rendering services free of charge was 35, not including three internes. The number of persons treated during the same time was, in the dispensary, 77,608, house patients 2,100, making the goodly total of 79,708.

A new departure in state charitable work was entered on with the establishment of the St. Charles' Home for Boys. The act creating this home was passed by the General Assembly in 1901. There was appropriated for its maintenance by the last General Assembly \$128,250, and for special purposes \$165,000. The work of this home is the training of boys in habits of industry so as to fit them for the ordinary employments of life. The institution undertakes the preparation of delinquent boys for good homes, chiefly in the country. To this end, the inmates are given a common-school education and taught and practiced in various trades and industries, including husbandry. This is a step in the right direction. In relation to crime, it constitutes the ounce of prevention which is worth a pound of cure. The boys who have become cligible to admission to this home, though often perilously near the verge of criminality, are still susceptible to the influence of wise and humane treatment.

Still another charitable work in charge of the state is represented by the State School for Girls, for the maintenance of which the last General Assembly appropriated \$105,000, and for special purposes \$113,900. Time will not permit me to dwell on the details of the work accomplished by this institution. I can do no more than indicate its general purpose, which is to care for and train to habits of regularity and industry delinquent and wayward girls. Any girl between the ages of 10 and 18 years, who has been guilty of a violation of any statute, law or city ordinance, and who is a vagrant without proper home, may be sent to this institution, on proper procedure.

Besides the charitable institutions which already have been discussed, Illinois maintains institutions of another class, the penal institutions of the state.

State Penitentiary at Joliet: Current expenses for 1906-7	\$ 480,000
and purchasing materials under the convict labor act	200,000
Southern Penitentiary, Chester: Ordinary expenses for 1906-7 For special purposes	$\substack{442,500 \\ 11,250}$
State Reformatory for Boys, Pontiac: Current expenses for 1906-7 For special purposes, including purchase of ma-	425,000
terials and carrying on manufacturing under the anti-convict labor iaw	20,000
	\$1.578.750

Time will permit me to devote but a word to the general condition of our penal institutions, which may be said to be good and to have been steadily improving in respect of equipment, sanitary condition and healthfulness. There are, however, certain new features of the institutions to which I wish to call your attention, and especially to the program which has recently been adopted in connection with the employment of convicts and the boys of the Reformatory at Pontiac.

In the administration of penal institutions, one of the difficulties which arises has relation to the employment of the inmates and the competition of their products with the products of free labor. The old system of contracting the labor of prisoners to private parties had become obnoxious to prison authorities and labor organizations alike, and, furthermore, was prohibited by a constitutional amendment adopted by the legislature and the people in 1886. No satisfactory substitute, however, was formulated until 1903, when the present Illinois prison labor law was enacted. This law was largely based on a similar law which had been in successful operation in the state of New York for some years. Under its terms, the interests of free labor have been carefully safeguarded by provisions which reduced the competition of prison-made goods to the minimum. This is largely secured by devoting the labor of the prisoners to the production of supplies and material for our public institutions, school districts and road districts, and further by a provision which limits the amount of prison-made goods which may be placed on the open market to 40 per cent. of the total product. The plan is, of course, in its infancy, having been in practical operation since the establishment of the headquarters of the Board of Prison Industries in Springfield on January 1 of the present year. Up to the present time, however, the following industries have been established: At Chester, the manufacture of brick and building material, road material, clothing, hosiery, brooms and brushes; at Joliet, furniture of all kinds, boots and shoes, brooms, foundry products, woven wire goods, and more recently a plant for the manufacture of shirts for the open market; at Pontiac. printing and bookbinding, and a plant for the manufacture of overalls for the open market.

Under the terms of the prison labor law, the public institutions are required to apply to the Board of Prison Industries for such of their supplies as can be furnished by prison labor, and the work of the board at the outset has consisted largely in classifying and tabulating the various articles called for by the state institutions, with a view to supplying to them the products of such industries as have already been established, and to the gradual diversification of prison industries, so as to cover the whole range of state institution requirements. At the present time it may be said generally that substantially all the prisoners are employed, and that the present demands of the public institutions are being reasonably met. Thus far not more than 15 per cent. of the inmates have been employed in the manufacture of goods for the open market, and it is unlikely that this percentage will be increased for some time to come.

Some of the work undertaken at the Pontiac Reformatory is of espe-

cial interest. Under the name of the Junior Republic, a class of 240 small boys has established a republic in miniature. This community has its own police, detectives, grand jury, petit jury, judge, clerk, state's attorney, sheriff. A citizen of the republic guilty of a violation of its laws is tried and punished by his fellow republicans. The only difficulty that has arisen thus far is that the punishments fixed are usually too severe. Appeals to the superintendent, however, are allowed, and any improper harshness is thus corrected. A manual training school is also in successful operation. For its management the services of Professor Drew of the manual training department of the Chicago University have been secured. This training is to be of an entirely practical character, with a view to fitting the students for work in the mechanical arts and other industrial pursuits. One hundred of the boys are engaged in farm work. A school teaching the ordinary branches is maintained, which the younger inmates of the reformatory are permitted to attend half of each day.

I would also call your attention to the additional employment furnished prisoners through the work now being conducted by our state highway commission. This commission has undertaken the work of encouraging the building of good roads throughout Illinois. Under the new road law, road material is furnished by the state free to county authorities applying for the same. In connection with this project a large amount of convict labor in the Chester Penitentiary is utilized in operating the stone crusher there located. Already applications for road material have been received from a number of counties, and with the building of good roads in these localities it is confidently believed that other applications will rapidly follow. It is hoped that this will employ a large number of convicts at Chester and be of distinct advantage to those parts of the state which desire to avail themselves of the benefits of the act. Under the law the item of transportation of road material, which is large, must be met by the exchange of crushed stone for ballast in payment of transportation charges.

An idea of the quantity of work called for by state institutions will be gathered from a summary of their requisitions for supplies for the present year. The approximate figures are as follows: Garments, 56,911; shoes, 16,000; office, school and house furniture, 5,300 pieces; bed-steads, springs, etc., 8,936 pieces; brushes and brooms, 15,890 pieces: letterheads, 127,000; envelopes, 250,000; forms and blanks, 375,000; books and bookbinding, 786; pamphlets, all annual and quarterly reports of the state institutions. For the Illinois State Penitentiary alone, 226,-355 pieces of stationery are required, at a cost of \$1,590.53. The stationery work of the Southern Illinois Penitentiary also amounts to \$1,000 and that of the state game commissioner \$7,000. The state has also made appropriations for the erection and improvement of public buildings to the extent of \$727,000, and it is proposed that a large quantity of material for this work shall be furnished by the Board of Prison Industries.

But I must conclude. As I said in the beginning, I am glad of the

opportunity to address you on our state institutions. While the range and magnitude of the work undertaken and accomplished by them has prevented anything more than a cursory glance at the system, I trust it may tend to draw attention to the subject and result in awakening that public interest which must precede and accompany every effort for social advancement. Toward the amelioration of the condition of the unfortunate and delinquent members of society, I desire especially to enlist the sympathy of those whose lines have fallen in pleasanter places, and to urge that sympathy, in a generous measure, be directed to the intelligent support of the work already organized and in operation in our state institutions.

THE ECONOMIC ASPECT OF THE MODERN TREATMENT OF TUBERCULOSIS.*

J. W. PETTIT, M.D. OTTAWA, ILL.

The successful application of a therapeutic principle depends quite as much upon correct methods as upon the correctness of the principle itself. We have passed through the period of skepticism with regard to the modern treatment of tuberculosis and entered upon an era of enthusiasm and activity. All that is now needed is to give our activities proper direction. There is a prevailing impression that because the treatment consists of the use of such commonplace and familiar agencies as fresh air, nutritious food and rest or exercise the methods by which these are applied are a matter of comparative indifference and are easy of application. This has led on the one hand to an unsuccessful attempt to carry out the treatment by methods so crude and imperfect that they would only be accepted by the exceptional patient, on the other by such lavish expenditure as to bring the treatment within the reach of only a fcw. The treatment is neither simple nor easy, and is, of necessity, relatively expensive. This makes it necessary to take cognizance of the economic aspect of the question.

It has been my privilege during the past year and a half to visit many of the leading sanatoria in this country. The most casual observer can not fail to appreciate the fact that any attempt to carry out the treatment according to the standards set by the institutions to whom we naturally look for guidance must fail because of the enormous expense attending their construction and maintenance. Much to my surprise, I found that four of the leading institutions have cost approximately \$1,250,000 and accommodate about 500 patients or less. This is a per capita cost for equipment alone of approximately \$2,750 which is expended for housing a class of patients who should not be permitted to live in a house except of the simplest construction, and certainly should not sleep between massive walls, no matter how constructed. Upon inquiry I found that this irrational method of procedure grew out of the

^{*} Read at the meeting of the Chicago Medical Society, held Nov. 29, 1905.

fact that the medical men who are supposed to direct and control their construction and management have practically nothing to say, and that the medical men in charge are quite as much opposed to this extravagance and unscientific method as those who are in a more independent position to criticise. These institutions are, for the most part, simply an expression of the vanity of the rich and should not be accepted as models for our imitation. This is extremely unfortunate, and especially just at the present time, when the demand for these institutions is so great that there is danger of the whole system being broken down by unnecessary expense. It may be said, with some appearance of reason, that it is nobody's business if certain rich men desire to give expression to their vanity by building expensive sanatoria, but it certainly does concern the general public when it is attempted to follow their example in the construction of institutions that must be built at public expense or numerous private subscriptions. As an illustration of the slavish adherence to the expensive and unscientific method which it is my purpose to condemn, I call attention to an item in a recent number of the Journal of the American Medical Association to the effect that the city of New York has decided to build a sanatorium for charity patients costing two millions of dollars, which will accommodate only eight hundred patients. Two millions of dollars properly expended should be made to accommodate eight times eight hundred patients and to the decided advantage of the patients themselves. While preparing this paper I received the annual report of a semi-charitable institution in the East. It represents a total investment of one hundred thousand dollars with accommodations for thirty-five patients, at a per capita cost of \$17.00 per week for maintenance. An earnest plea is made for further donations for buildings to increase the capacity to fifty, with the statement that by so doing they can bring the per capita cost to about \$12.00 per week. In these two illustrations I have not selected exceptional cases. I think they fairly represent the average expenditure now being made in such institutions. These is no phase of the tuberculosis problem which demands more immediate and careful attention than how we shall expend our money in the care of tuberculous patients, no matter whether at public or private expense.

The modern treatment of tuberculosis is primarily based on life in the open air. To meet this demand we must make a radical departure from the conventional plan of hospital construction. It was perfectly natural that these sanatoria should at first copy the usual methods of hospital construction; hence has arisen altogether too expensive an ideal. The great difficulties encountered in carrying out the open-air treatment are so formidable that any method which will cheapen or simplify the treatment should be favorably considered. Providing tuberculous patients with sleeping apartments in substantial buildings is not only unnecessary, but in violation of an essential principle which has for its object supplying the patient with fresh air. The simplest and least expensive method which will protect the patient from the inclemency of the weather and supply him with the largest possible amount of the best

possible air is the one which commends itself for scientific and economic reasons. We should proceed on the principle of the greatest good to the greatest number. If we can make a given sum of money which is now expended in the care of one patient provide for several, it is our duty to do so. This can and ought to be done. This is the problem which we have been trying to work out at the Ottawa Tent Colony, and, we believe, with some degree of success.

Theoretically the tuberculous patient should live in the open air all the time. This, however, is not practicable. He must have a warm place in which to eat, dress, undress, bathe, and perform his toilet. This makes it necessary to provide an administration building where he can dine and spend the hours especially set apart for social enjoyment. bath house with toilet facilities is, of course, necessary. At all other times the only protection he needs is from rain, snow and high winds. A properly constructed tent which can easily be heated for the short time necessary to dress and undress completes the equipment. This can be done at a per capita cost of \$300 and provide the patient with accommodations which will be acceptable to any except the most fastidious. Any attempt to provide accommodations for this latter class will fail because it is necessary for all to give up many of those things pertaining to our present method of living if they are to recover. A calculation based on the above data shows that the cost for equipment need not be more than from 10 to 25 per cent. of what is now expended. The difference between the interest on the money invested in these more expensive institutions and the depreciation of their property, and three hundred dollars, the sum actually necessary, will cure one or two incipient cases each year. This, in addition to providing for from four to ten patients where one is now accommodated. While there has been much criticism of the lavish expenditure in most of our first-class institutions, I am not aware that any attempt has hitherto been made to determine approximately the amount actually needed. Where a protest has been made, the tendency has been to go to the other extreme and provide an equipment so very meager and unattractive that none but the exceptionally courageous patient would accept the accommodations offered. This has been true of many of the tent colonies which have been established, and in some respects is guite as serious a mistake as has been made in the other direction. We must meet the demands of the average patient and on his own terms. We must not make the treatment so expensive that he can not afford it or so cheap that he will not accept it.

Since it has been demonstrated that the tent is practicable in a cold climate, it should be used more extensively. It fulfills the conditions most perfectly from a scientific standpoint. The difficulty of keeping patients in the open air is well known. Every temptation placed before them in the way of indoor comforts only adds to the difficulty. As well might we set a hungry man at a table laden with good food and expect him not to eat as to place a tuberculous patient in a comfortable building and expect him to keep his doors and windows open. A few patients will do it, more will not. The only way to insure patients getting fresh air

is to place them where they can get nothing clsc. To be consistent we must keep our patients out of doors, not part of the time, but all the time. In no other way can this be done so easily and satisfactorily as in a tent. It is generally conceded that a tent is an ideal method of housing tuberculous patients in a mild climate. Every argument which may be urged in favor of its use in a mild climate applies with equal force to any section of the United States. Precedent, prejudice, misconception and ignorance must be overcome before the value of the tent in the treatment of tuberculosis will be recognized. No amount of argument will settle this question. A practical demonstration is all that is needed to convince the most skeptical.

The cost of food is the most expensive item in the treatment of tuberculosis. Any attempt to cheapen this feature by cutting down the quantity or cheapening the quality will tend to nullify the treatment just to the extent to which this is done. The psychical element must be also considered. This makes it necessary to provide certain forms of amuscment and recreation which adds somewhat to the expense. There is another feature in the more expensive institutions which is bad. The morale of too much extravagance is injurious to the future of the patient. For example, take a young man who has never had more to supply his wants than is afforded by a meager salary of ten or fifteen dollars per week. Give him an opportunity to cultivate extravagant tastes inculcated by a sojourn of several months in a luxurious sanatorium and then send him back to his former method of living, or, what is more likely, with his earning capacity greatly diminished, and what is the inevitable result? If he is not demoralized, he is a young man of more than ordinary stability of character. This argument is not far fetched, but is based on facts.

In the location of many of these institutions some one feature, as, for example, a beautiful outlook, has been allowed to dominate the whole situation. This, in many instances, has led to their being located far away from centers of population and food supply-in places not casily accessible, even to the extent of being several miles from a railway station. Not infrequently water is difficult to obtain and only at great expense. These are minor mistakes, but in the aggregate add materially and unnecessarily to the expense. Not infrequently the acceptance of a donated site is an unfortunate investment. This whole question must be considered from a business standpoint and conducted on business principles. Just in proportion as we depart from business methods in the conduct of these institutions just to that extent do we impair their usefulness and invite failure. Any proposition looking to the care of the vast army of consumptives resolves itself in its final analysis into a question of dollars and cents. It is not possible, except on the most extravagant scale, to provide for even a majority of these sufferers; therefore, it is the duty of those most prominently identified with their care not only to devise inexpensive methods, but to firmly oppose the present tendency to extravagance and lavish display which characterizes all of our leading sanatoria.

SANATORIUM TREATMENT OF TUBERCULOSIS IN COLORADO.*

G. W. Holden, M.D. Denver, colo.

The tubercular patient of to-day, upon discovering that he has this disease, and in the light of present knowledge, immediately casts about for the surest and safest road to recovery. He not only demands of his physician assistance for the present symptoms, but looks to him to map out a campaign that must necessarily cover a period of months, if not years, the length of time depending upon the amount of involvement and the stage of the disease. The future of every tubercular patient is more or less in the hands of his medical adviser, and is influenced by the ability of the latter to make an early diagnosis, providing he has the opportunity of so doing, for I recognize the fact that a patient rarely thinks of consulting a physician at the onset of the disease, unless alarming symptoms are present. In a certain percentage of incipient cases, tuberculosis is a curable disease and can be cured in any climate, but a much larger percentage of cases can be cured under the more favorable climatic conditions.

The profession is awakening to the realization that an early diagnosis can be arrived at only by painstaking investigation and re-examinations, and, to quote from the circular recently issued by the Illinois State Board of Health (which, by the way, is a very serviceable guide to early diagnosis): "Every suspected case should be treated as a suspected case and examined accordingly. More cases of tuberculosis are overlooked for want of examination than for lack of knowledge on the part of the physician." This means that all clothing above the waist should be removed and a thorough physical examination made. Too often the condition of the bases of the lungs is entirely overlooked. A full and accurate knowledge of the extent of the disease has a most important bearing upon our prognosis and upon our advice to the patient. Statistics show that one-tenth of all deaths in the United States are due to tuberculosis; in the large cities the proportion is much higher. Upon consideration of this fact, its bearing upon our practice becomes evident. The procedure I wish to advise, to most strongly and earnestly urge upon the profession, is neither too radical nor unwarranted by the conditions that confront us. In every case coming under our professional care, between the ages of fifteen and fifty, the possibility of tuberculosis should be carefully considered and most carefully eliminated from the problem. It is only in this way that the many early cases of tuberculosis can be recognized when they should be—in their incipiency. It is only in this way that we can discharge our full duty to our patients, to their lasting welfare and to our own credit as careful and conscientious physicians.

After having made an examination of my patients and having ac-

^{*} Read at a meeting of the Chicago Medical Society, Nov. 29, 1905.

quainted them, even in very conservative terms, of the extent of their discase, it is startling to note the number who express regret that an carlier diagnosis had not been made. Also many of these patients express surprise at being requested to remove their clothing to the waist, and volunteer the information that in previous examinations it was not considered necessary. To us it can not but be evident that the family physician, while perfectly capable of making a thorough examination. has carelessly satisfied his patient of the absence of tuberculosis by a superficial examination. The patient is also not unaware of this fact. I am inclined to dwell upon this subject of early diagnosis, for its importance is far reaching. I am satisfied that the general opinion of the profession, much more that of the laity, as to the curability of advanced tuberculosis is erroneous. It is only the early cases which, with the present knowledge of treatment, can be positively cured; to the advanced cases we can not promise more than an arrest, which under proper conditions may extend over a period of some years.

When a correct early diagnosis has been made, there are certain considerations which are vital and which must be fully considered by the medical man in planning the campaign for the patient. The first and most important factor to be considered is the patient's financial condition, as upon this rests largely his chance of recovery in the majority of cases. However, it is not wise to give the patient the idea that his poverty stands in the way of his recovery, for it is bound to cause a deplorable state of mind. It is for the physician to exercise good judgment in this particular. Without funds the patient must of necessity remain at home, in the most favorable surroundings obtainable under the circumstances, entirely dependent upon his relatives and friends, or else he exhausts the limited funds furnished him by interested friends, churches or fraternal organizations in transportation to some far-distant health resort. Colorado sees many pitiful examples of such misguided charity toward unfortunates, who are in consequence stranded hundreds of miles from home and friends, too ill to work, and who eventually become county or state charges. On the other hand, if the patient has funds it is the first duty of the physician to see that he is at once removed from his present environment, as such a change alone will prove beneficial to the majority.

Then arises the question, Where can he best be placed? It should be taken into consideration that the average man feels that he can not be spared from his home or business for any great length of time, and, therefore, he must consider the health resort most favorable to the rapid arrest of his particular case. This is the opportunity for the physician to impress upon his patient the necessity of arranging his business and of taking a vacation of sufficient length to bring about this arrest. If the physician entices him from home under the delusion that a speedy recovery can be brought about in a month or two he not only loses the confidence and patronage of his patient, but jeopardizes the latter's recovery. In advising the patient where to go the physician has at his disposal unlimited literature descriptive of hundreds of resorts.

What the patient requires is an all-the-year-round climate. This, of course, opens up a wide field for discussion, but I am convinced that Colorado possesses and offers to the average patient coming from an unfavorable climate the most desirable features for a residence for such time as is required to bring about a cure or an arrest of his disease. Although our climate, as described by Dr. Gardner, "is as varied in many of its aspects as the surface of the state itself," the tubercular patient can with comfort live an open-air life throughout the entire year in those regions recognized as being the most desirable.

Colorado is blessed with altitude, exhilarating dry air, blue sky and bright sunshine, and these factors are most important from a medical standpoint. Altitude causes diminished atmospheric pressure and greater rarity of the air, resulting in increased lung expansion without unnatural effort. At sea level this can be acquired only by resorting to deep breathing exercises, chest gymnastics, or both. Altitude also affords a degree of absolute and relative atmospheric humidity which is much less than at warmer places of lower elevation. This question has been much discussed. Dettweiler and others have maintained for many years, and have attempted to prove, that temperature, atmospheric pressure and humidity scarcely influence the condition of the consumptive. Yet we have conclusive clinical proof from observations made in Colorado and elsewhere which refutes this theory. In the recognized health resorts of Colorado, mists are of very uncommon occurrence. Colorado has fewer cloudy days and more blue sky, varying, of course, according to the season of the year, than eastern health resorts. The air has a greater transparency, owing to the absence of clouds and mists and the low degree of absolute humidity; the sun's rays are more powerful and direct than in low altitudes. The sun renders the air more nearly aseptic and its beneficial effect upon the physical and mental condition of the patient is unquestionable. It is true that the summer months are hot, but the heat is not enervating and can be borne with comfort. There is a difference of many degrees between the temperature in the sun and that in the shade, due to the rapid and unimposed radiation from the ground through the dry, clear atmosphere. It has long been recognized that mountain air is free from organic and inorganic dust and micro-organisms. This, of course, can be accounted for in a measure by the sparseness of the population and by the influence of light.

So much has been written regarding the climate of Colorado and the Rocky Mountain regions, and especially the climate of Denver, that I feel justified in quoting a few observations made by Mr. F. H. Brandenburg, district forecaster, United States Weather Bureau, stationed at Denver. His observations cover a period of some years and are to be relied upon. He says: "Discarding fractions of a degree, the mean average temperature of Denver is 50 degrees. During the last thirty-two years 100 degrees or higher has been touched just thirteen times in Denver. While these high temperatures were maintained only for a few minutes, readings in the 90s are common in every summer month. For July, the warmest month, the average temperature is 72 degrees,

and the average maximum, or afternoon reading, is 87 degrees. Pretty high, it is true, but on the other hand the average minimum, or night temperature, for July is 59 degrees, which all will agree is very comfortable for mid-summer. The coldest month is January, with an average temperature of 29 degrees. Zero or lower has been noted 343 times in the thirty-two years. These readings are night temperatures and not to be confounded with the mean temperature nor with the maximum temperature. The annual precipitation, which includes rain, snow, sleet and hail, is 14 inches; Chicago, 34.8 inches; Boston, 45 inches. May, the wettest month of the year, has an average of 2.61 inches, and April, the next in order, 2.01 inches. The average number of days with 0.01 of an inch or more precipitation is 81, against 120 at Chicago and 121 at Boston. This is an excellent showing, in view of the fact that this number represents, in the case of Dcnver, not days with continuous rain, but principally days with showers of short duration. Of sunshine days we have 69 per cent. of the possible, as against 53 per cent. at Chicago and 54 per cent. at Boston. It is of interest to note that in these cities the greatest number occur in the summer months, while with us the winter months bring the highest percentages. Thus for the winter months our average is above 70 per cent., while the lowest average for any month, 61 per cent., is for May. Only once in twelve years has the monthly average of sunshine fallen below 50 per cent. Occasionally the monthly average is as much as 89 per cent. On the other hand we have some days without any sunshine. There are not many such days, however. The average is one day a month. The average relative humidity is slightly below 50 per cent., while at Chicago it is 77 per cent. and at Boston it is 72 per cent., and in the Atlantic states the humidity during the warm months is greater than the annual, the reverse of that which obtains in Denver. In brief, our summers are characterized by warm days and cool nights, the heat of the day not attended by the usual debilitating effects; our winters by an abundance of sunshine and the general absence of snow and of severe and longcontinued cold."

Climate alone, however, can not be depended upon to effect a cure, and it is a great mistake to advise a patient to go to Colorado or any other health resort and follow his own inclinations. Only two safe courses are open to the health-seeker. He may either employ the services of a competent physician or he may enter a sanatorium. When it is possible, the latter course is advisable. This brings us to the consideration of the subject in hand, "Sanatorium Treatment of Tuberculosis in Colorado." Colorado has been spoken of as the "hospital state" of the Union, but it has few institutions in proportion to the thousands of people who go there seeking health. Though there are many of these constantly springing up, and for various reasons passing out of existence, still there remain institutions, both large and small, scattered through the state that are doing excellent work. I will mention only some of the most prominent. At Amity there is the Emma Booth-Tucker Memorial Sanatorium for Consumptives, a tent colony, erected

and maintained by the Salvation Army. The Glockner Sanatorium, a Roman Catholic institution; the Nordrach Ranch, a tent colony, and Dr. Solly's cottage sanatorium, Cragmor, are the three principal ones at Colorado Springs. The Association Health Farm is a tent colony west of Denver and under the auspices of the Young Men's Christian Association. The National Jewish Hospital for Consumptives, built on the pavilion plan, and the Jewish Consumptives' Relief Society, a tent colony, both situated in Denver, are the two largest free institutions in the state. The "Home" at Denver is not, strictly speaking, a sanatorium. It is a splendidly-equipped church home for consumptives. All of these institutions are doing good work according to their means and in their several fields.

I have been asked to speak in detail of the institution with which I am connected, the Agnes Memorial Sanatorium. Mr. Lawrence C. Phipps has erected this institution in Montclair, a suburb of Denver, as a memorial to his mother, Mrs. Agnes Phipps, at a cost, including the endowment, of over half a million dollars. The sanatorium, a closed institution, was the first of its kind to be established in the Western states and was opened for the admission of patients July 2, 1904. It is situated on dry, sandy soil, at an altitude of about 5,400 feet, and commands a most magnificent view of the Rocky Mountain range from Pike's Peak to Long's Peak, a distance of 150 miles. The buildings are designed after the old Spanish Mission style of architecture, adapted to our requirements and differing from the original Spanish Mission in having the porches high and airy, allowing the sun's rays access to all the rooms. The construction is of rough brick, covered with Portland cement in its natural color, a warm gray, roofed with red tile. The institution at present has two pavilions for the housing of patients, a three-story administration building, a medical building, a power plant and twenty house tents, besides an open-air pavilion of wooden construction, which we have recently erected. Each of the two large pavilions, one of which is for men and the other for women, accommodates forty patients, twenty on each floor, each story being surrounded by wide porches. On each floor there is a linen room and a chambermaids' workroom, also a tiled bathroom with tub, sitz, shower and needle baths. The patients' rooms are 11x14 feet, with rounded corners, washable walls and high ceilings. Each room has a large window and transom, and the outer door, wide enough to allow the passage of a bed, opens upon a wide veranda. By means of movable canvass curtains the veranda may be divided, giving to each patient an individual sleeping porch and an opportunity for privacy during the day, should he so desire. On these porches the patients spend almost the entire twenty-four hours, summer and winter, except in very inclement weather, when the beds are moved into the rooms. Within the room there is a specially-devised ventilating system, taking the impure air from the floor. This system, with the doors, transom and windows, furnishes the patient with from 15,000 to 18,000 cubic feet of fresh air per hour. All rooms and corridors throughout the entire institution have washable walls painted in pleasing colors; all corners are rounded and the finish is of hardwood, highly polished.

The situation of the buildings is such that the direct sun's rays penetrate into each room at some time during the day. The rooms are heated by the Paul vacuum system, the "direct indirect" method. All buildings and tents are lighted by electricity, which is the only safe and sanitary method of lighting any institution of this character. The open-air pavilion accommodates sixteen patients and is designed to furnish, at a moderate cost of construction (\$150 per bed), suitable quarters for those unable to afford the regular pavilion rates. The medical building is a two-story structure, having on its ground floor the consulting and waiting rooms, a pharmacy and examination and treatment rooms. The x-ray room is equipped with a Carstarphen twenty-inch coil and highfrequency apparatus, and is also arranged for skiagraphy. A fullyequipped clinical laboratory completes the rooms on the first floor. The second floor is the hospital department for those patients ill enough to require special nursing, as in cases of hemorrhage, pneumonia, etc. On this floor there is a well-equipped operating room and a diet kitchen, besides an isolation room for use in contagious diseases. In the administration building are the business offices, reception and board rooms, library, dining-room and kitchens. The second floor is devoted to staff quarters and the main linen room. The "L" of this building is given up to quarters for servants. The third floor has nine extra patients' rooms and a commodious and well-ventilated assembly hall, with a stage for theatricals. In the kitchen there is a model power washing and sterilizing machine, where all dishes and silverware are sterilized directly after each meal. An underground passage extends from one end of the institution to the other, affording access to all buildings, and is used by the patients to reach the dining-room and medical building during inclement weather.

The power plant, a model of its kind, furnishes electric light, power and refrigeration for cold storage and the manufacture of ice. In connection with the electric laundry, which is in this building, is a complete sterilizing plant, in which all bed and table linen, as well as the patients' laundry, is sterilized before being received into the laundry proper. the rear of the power house is a room containing a crematory. When the plant was in process of construction I found that there was on the market no device for quickly and economically destroying such infected material as accumulates about a hospital. After investigation I was successful in perfecting an apparatus which accomplishes the desired end in an efficient manner. I use a crude petroleum blast, furnishing heat of over 2,000 degrees, in which the débris is completely reduced to ash almost immediately. The patients are furnished with the Seabury & Johnson paper sputum cup in a covered aluminum holder. For those taking exercise, the pocket cup manufactured by the same company is supplied. Twice daily the cups and holders are collected, the cups are burned and the holders sterilized in another special device by live stcam.

The method of admission of patients to the Agnes Memorial is similar to that adopted by other closed sanatoria. The family history, personal history, a careful outline of symptoms and the result of the medical examination are recorded. All pulmonary and laryngeal findings are

diagramed. Examinations of blood, sputum and urine are made soon after arrival. The patient is furnished with verbal and written instructions for his daily routine. He is cautioned in regard to his personal hygiene and the disposition of his sputum. His written instructions are made out on printed forms, regulating his rest, exercise, recreation and meals. Each case is made a special object of study and instruction is given accordingly. The average patient's daily life is as follows: If he requires it, beef juice or a glass of hot milk is brought to him by a nurse before rising in the morning. The rising hour is 7 o'eloek, when he takes a cold sponge, needle or shower bath, followed by a brisk friction rub, after which he is ready for the 8 o'eloek breakfast. After breakfast he returns to his porch and enjoys an hour of quict rest in the open air, either on his bed or reclining chair, in a recumbent position. During this time the physicians make their rounds, visiting each patient. From 10 to 11 a.m. is the exercise hour, when the patients take their prescribed exercise, returning to the administration building at 11 for recreation hour, and in the ease of those requiring it for lunehes of raw eggs, milk or beef juice. The recreation hour is from 11 to 12, and during this time the patients are allowed to play games, such as croquet, cards, pool, eheckers, etc., either out of doors, on the porehes or in the sun parlors. From 12 to 1 is a rest hour for all patients, and this hour finds them on their beds in the open air, weather permitting, the only excuse for remaining in their rooms being a severe dust, rain, snow or wind storm. Dinner is served at 1, after which they return to their porches and remain until 3, when again they are allowed to exercise. From 5 to 6 is another general rest hour on the bed. During this hour the physicians again make their rounds, visiting each patient. Supper is served at 6. After supper until the retiring hour the patients are allowed recreation on the porches or in the sun rooms. During this time they also have free access to the well-equipped library. Upon retiring to their rooms, after taking their cold sponge baths, or rubs, they are ready for bed. At this time the night nurse brings to those requiring it hot milk or raw eggs. The general retiring hour is 9 in the winter and 9:30 in the summer months. Patients are encouraged to engage temperately in such light work as needlework, croeheting, painting, and a moderate amount of study, as a mind occupied conduces to contentment. Right here I want to say that the condition of the mind has an immense influence on the well-being and progress of the tubercular patient.

Beside the daily program as outlined, there are the daily treatments of the nose and throat eases, monthly physical examinations, blood, sputum and urine examinations in the laboratory, also the weekly instructions and weighing. A eareful record of all cases is kept from the time of admission until discharge. Temperature, pulse and respiration are recorded from time of entranee until they become normal. I should like to call attention to what I consider the four cornerstones upon which rests the success of an institution for the treatment of tuberculosis, viz., good food, fresh air, rest and discipline. I put them in the order of their value, but I lay great emphasis upon the last named, discipline. "As the healing of a tubercular process is largely dependent upon the state of

nutrition, the question of diet becomes of the very first importance." Thus Dr. Osler expresses the necessity of furnishing the patient the most nourishing food possible. It has been proven that in the blood of tubercular patients there is a diminished number of red cells, a lower percentage of hemoglobin and a decrease in alkalinity. Unless we furnish the patient with blood-producing food we can not expect this depleted carrier of nutrition to supply the demand made upon it by the constant breaking-down process going on at the seat of tubercular involvement. Our first aim must be to increase the number of red-blood corpuscles, for theirs is the function of carrying the life-giving element, and we recognize the value of certain foods over others as tissue-builders. Therefore we must regulate our diet accordingly and exercise great care in the selection and preparation of the food. It should be simply prepared and made appetizing, with enough variety to prevent it becoming monotonous. Our main dependence is upon milk and its products, eggs, meat, vegetables, cereals, bread and fruit. It is not necessary for me to enter into a discussion of these foods, as every work on dietetics covers the ground in detail. I have found, however, that a generous mixed dict is all that the average tubercular patient requires. For those with disordered digestion it is necessary to limit the diet, making a special study of the individual case. In spite of all that has been urged in favor of forced feeding, my best results have been obtained from three regular meals a day. At one time I made a test, putting half my patients on the three-meal system. For the remainder I prescribed three very large meals, with lunches between, paying due attention to their eliminative organs, and I found that those patients taking only three meals a day made much more satisfactory progress in every respect, having fewer digestive disturbances and less discomfort, coming to their meals with an excellent appetite, which was the exception in the case of the others. To overwork an already weakened digestive apparatus is to retard the progress of the patient.

Under the open-air treatment the powers of assimilation improve and the increasing appetite, gratified by a proper diet, brings with it increasing strength and health. Overindulgence in fresh air for the tubercular patient is not possible. Fresh air is his salvation. So much is being constantly written on this subject that I shall merely call attention to a few necessary precautions. Those not accustomed to an open-air life find it a little trying at first and must be gradually hardened to it. Our method with a patient who comes to us with the idea that fresh air, and especially night air, is harmful, is to disillusion him at once. At first he is requested to open his large window and outside transom. After a few nights spent in this way the wide door is opened, and this practically opens the porch side of the room. Next the door and transom leading into the wide corridor are opened. This gives him a free circulation of air, for the large doors at either end of the corridor are always open. It is seldom necessary, after such a preparation, to request the patient to sleep on his porch; he himself requests the privilege of doing so, and after having enjoyed the exhibarating effect of a few nights out of doors

he resents being ordered inside to sleep. It is necessary to dress according to the season, weather and time of day. During the warmer months there is very little difficulty in protecting them, but during the winter months the question of clothing calls for a careful selection, and the bed clothing should be sufficient to assure warmth through the entire night. The patients should dress and undress in a warm room and never get into a cold bed. The sheets can be heated by an electric pad or by moving a hot-water bag between them, afterward leaving it at the foot of the bed for a foot-warmer, but woolen blankets are much more satisfactory than sheets for extreme weather. A head protector of some sort is essential for winter nights. On cold days the patient should not neglect to wrap himself well in a blanket, whether on his bed or in his rest chair, with heat at the feet if necessary, for with warm feet he will not feel the cold.

It is recognized that rest is one of the most important factors in retarding tissue change and in rendering the individual less susceptible to the growth of the tuberele bacillus. Therefore it is of the utmost importance that the patient be kept quiet until such time as exertion can be taken without producing temperature or an increased pulse rate. An afternoon temperature of 100 degrees or over ealls for absolute rest in the recumbent position until it subsides, even though it may be a matter of days or weeks. A great advantage of the rest cure is that the tendency to hemorrhage is markedly reduced. While a large proportion of our patients come to us with histories of numerous hemorrhages, during the period of a year and a half since the institution opened, under enforced rest, not more than half a dozen eases have developed hemorrhages, and in two cases only was the hemorrhage severe. In both of these eases anatomical conditions were such that large hemorrhages were unavoidable, vessels of considerable size in conjunction with cavities being croded. Once having overcome the patient's temperature, and all other conditions being favorable, the question of exercise arises. Exercise stimulates the appetite, increases the activity of the eliminative organs, aids expectoration and improves the morale of the patient, but in regulating it great caution is necessary. No other exercise is as beneficial to the tubercular patient as walking. He should begin with a few rods, gradually extending his walk until he is able to cover several miles a day without fatigue. The fact that he should never allow himself to become fatigued should be well impressed upon him. Many lose sight of this fact and walk until they feel tired, realizing too late that they have insufficient strength for the return journey. One such mistake will often undo what it has taken weeks to accomplish. Our patients are instructed to walk slowly, breathing through the nose, and to do very little talking, making it a point to sit down and rest before returning to the institution. As I have already stated, patients at the Agnes Memorial are required to observe a general rest hour before dinner and one before supper, during which time they are not permitted to read or to converse. This relaxation puts the digestive organs in better condition to do the work required, and the patient goes to meals with a good appetite. Again after each meal they rest to facilitate assimilation.

It is recognized by medical men that the life of the tubercular patient in his own home is largely regulated by his own inclinations and caprices, irrespective of the instructions given him by his physican. The regularity of meals and character of the food, the amount of exercise and when to take it, the necessity of taking a sufficient amount of rest and of retiring early, the care of the sputum and the protection of others, personal hygiene and baths-none of these instructions can be carried out systematically or successfully outside an institution. This requires close observation and firmness and unremitting effort on the part of those in charge of a tubercular patient. It can not be successfully managed in the home, even though a competent trained nurse be installed, because of the interference of friends not familiar with the necessity of strict observance of minute details, and it is impossible for the physician during a short office consultation, or a visit to the home, to lay down rules necessary to govern the patient and expect him to remember them all. He will grasp only one or two, putting his own interpretation upon them, and overlooking others equally as important, perhaps thinking them of too trivial a nature to be remembered. In an institution the patient's daily program is outlined for him and there are no outside influences to divert him from carrying it out. He is always under close observation by persons whose duty it is to see that he obeys his instructions. How much of all this can a busy physician in general practice supply?

Before passing to a statement of results, I wish to touch upon the objects of a sanatorium, especially of the Agnes Memorial. The first aim of any institution should be to restore to a life of usefulness those who are afflicted with this disease. A most important object is the education of those reached directly and indirectly by the work of such an institution. This is an ever widening circle of influence. Another is the opportunity for close observation, study and original research. The paramount object of this sanatorium is to reach those individuals of moderate means who are stricken down in the occupations of active life and to restore them to their position as useful members of society.

As to our results, my basis for classification is that recommended by the committee of the National Association for the Study and Prevention of Tuberculosis. To the best of my ability I have made accuracy in conforming to this my only consideration. Time is needed to show the value of this classification as a working basis. My report covers but one year, the first, of the institution's existence. During this year 224 patients were admitted, 107 discharged, 8 dismissed for non-observance of rules; 13 remained less than one month. The basis of my report will be upon 102 cases, whose average stay was from six to eight months. Of these 102 cases, 13 were discharged apparently cured, 28 arrested, 43 improved, 16 unimproved with progressive disease, 2 died. With our present knowledge and means at command in the treatment of tuberculosis, and taking into consideration the limited stay at the sanatorium, six to eight months, it must naturally follow that the number of patients discharged as cured is relatively small. Further, these patients should be classified as "apparently cured" until it has been demonstrated that they are fitted to endure the ordinary stress of life without recurrence of the

disease. From three to five years should clapse before a case is pronounced cured. Owing to necessity, the character of cases accepted was not such as I should have chosen had the end in view been only the showing of excellent results, but one of the main objects of sanatorium treatment is education, and this we have ever kept in view. Patients who have had the advantage of a six months' stay in a properly-conducted sanatorium become enthusiastic converts to its methods, and after leaving it do an incalculable amount of good as missionaries of the doctrine of right living.

The cases upon which my report is based fall into three classes—the incipient or favorable cases, the moderately advanced and the far advanced. Of the incipient cases, 64.70 per cent. were discharged apparently cured, 17.65 per cent. were arrested, 17.65 per cent. were improved. In none did the disease progress, and none died. Of the cases moderately advanced, 4.65 per cent. were discharged apparently cured, 39.54 per cent. were arrested, 46.50 per cent. were improved, in 9.30 per cent. the disease was progressive, none died. Of the far advanced cases, none was cured, 19.05 per cent. were arrested, 47.62 per cent. were improved, in 38.57 per cent. the disease was progressive, 4.76 per cent. died. Upon a comparison of our work with that of other institutions, our showing is good. These results were obtained under the unfavorable conditions of opening a new institution, with all its attendant labors and difficulties.

I have previously spoken of my conclusion that forced feeding was not essential nor desirable to obtain results. I prefer to depend upon an abundance of good food served in the three regular meals, in conjunction with the careful regulation of the life of the patient. Of course, constant attention is paid to assimilation and elimination. My results from such a course are these: Of the incipient cases, seventeen gained 132 pounds, an average of 73/4 pounds. This is a small gain for each . case, but the majority of incipient cases are not emaciated. Of the cases moderately advanced, thirty-eight gained 432 pounds, an average gain of 11 1/3 pounds. Of course, in exceptional cases exceptional gains were made. I give only an average. Of these cases, five lost 163/4 pounds, an average of 3 1/3. Commenting on this, my experience shows me that when a patient is near his average weight the gain or loss is not always an index of the pulmonary condition; and, after all, the lung condition is the vital matter. Of the far advanced cases, twentynine gained 288 pounds, an average gain of 10 pounds; notwithstanding this gain, their pulmonary findings placed them in this class; thirteen lost 533/4 pounds, an average loss of 4 pounds.

It does not lie within the province of this paper to touch upon the many problems confronting the phthisiologist; prophylaxis, municipal regulations, state sanatoria, the consideration of immunity, with the many fields of rescarch opened through this latter, fields full of interest and full of promise, in all of which we hope to have our share. My purpose has been to give an idea of what we are doing at the Agnes Memorial Sanatorium, a work which has been made possible through the philanthropy and public spirit of Mr. Lawrence C. Phipps.

IGNORANCE AS A CAUSE OF DISEASE AND DISASTER.*

DENSLOW LEWIS, M.D.

Chairman of the Section on Hygiene and Sanitary Science of the American Medical Association.

CHICAGO.

Allow me to express my thanks for the cordial invitation of your officers, which affords me the opportunity, highly prized, I assure you, of addressing you on this occasion. In addition to the medical men in attendance, who represent the membership of the North Central Illinois Medical Association, I see before me many non-medical residents of La Salle and adjoining counties, and it gives me great satisfaction to see many young men and young women who, I am told, are students in the various institutions of learning located in this favored community. What a happy privilege is yours, my young friends. Believe me, life offers no greater charm nor is there in the evolution of experience a more rational gratification, than the consistent development of that noble part of our nature which we call mind, the great controlling power in the formation of character. Character is the man. It is what he is in distinction from what he has. The tendency of the times is to value the man for what he has. Success is supposed to be represented by an accumulation of property regardless of the means that may have been resorted to in order to make such an accumulation possible. Honesty sulks in the shadow. Wealth is the standard and all else would seem to be inconsequential. According to modern doctrine the greatest interest of man on earth is money. It alone appears to be the foundation of social security. general happiness and the improvement of the human race. It alone seems to constitute the paramount motive of man's ambition and the ultimate and only rational end of all his activities. By the extent of its acquisition his worth is guaged. The sinfulness of the process is forgotten in the success of the achievement. The oppression of the weak, the sufferings of the unfortunate, the corruption of voters at the polls, of public servants in office, of law makers in the legislature or of judges on the bench are but incidents—very minor and insignificant incidents—in the man's rise in the world. The important question of the day would seem to be how best to attain riches and still escape the penitentiary. It matters not if the enrichment of one is built upon the impoverishment and ruin of thousands, it matters not by what strategy, deception, fraud or falsehood integrity is overcome, credulity is imposed upon, or inferior intelligence is entrapped, the accredited standard allows but the question, Has the end been attained, has money been made? Truth, honesty, virtue and decency have apparently lost all intrinsic value; they are not wholly cast aside; they remain as an occasional expedient means of money making, but other value, it would seem, they have none.1

But there is a Higher Power, eternal, infinite and omnipotent, which, by whatsoever name called among men, created the universe and rules

^{*} An address delivered by invitation before the Streator meeting of the North Central Illinois Medical Association, Dec. 5, 1905.

1. N. M. Zimmermann: Wildwood Philosophy.

the destinics of mankind. History reveals many sad epochs, many reigns of terror, many periods of corruption and degeneration. But, after all, the world progresses and, one way or another, time brings a remedy for all ills. A certain retrospect is apparently necessary for the proper estimation of the value of events, but in the end we must believe that truth will triumph and justice will prevail. We must believe in evolution and progress and our chief endeavor, as honest men and women who have had the advantages of education, should be to show our appreciation of the opportunities we have enjoyed by doing what we can to advance the cause of truth.

What is truth? This question of Pilate recurs in each succeeding generation with ever-increasing earnestness. Men have thought they have found the answer. Their lives have been given freely and with enthusiasm, to uphold and maintain their solution of the problem. These men have not suffered and died in vain. John Brown died, but the slaves are free. The patriots died, but liberty lives. The men who wore the blue and the men who wore the gray died, each giving up his life in the cause of what he believed to be the truth, but the Government lives and a reunited and re-created nation takes its place in the world; a nation, designed, we must believe, to exert a wonderful and most beneficent influence on the destinies of all other nations. The Nazarene died, but the doctrine of love remains and the influence of the most wonderful character the world has ever known continues to be most inspiring and most powerful for good, and will ever so continue while humanity exists. What is the truth? I can not pretend to answer for you this great question of the ages. Government began among primitive people when the strongest, most courageous and most sagacious man in every nomadic tribe dominated his fellows and forced obedience to his will. In this way might became right. The primitive mind was cognizant, however, of many elements in nature beyond the control of the chief and quite apart from his jurisdiction. The great forces of nature as expressed in the thunderbolt, the earthquake and the constant and regular change from day to night and from summer to winter challenged the admiration and respect of our primitive forefathers and made them recognize the existence of a superior force, an overmastering, universal impulse, which became the cause and the subject of most exalted thought. In the absence of the power to grasp and formulate abstract notions or to disassociate attributes and qualities from the objects in which they are manifested; in the inability to comprehend a power or an emotion without some tangible, suggestive symbol, primitive man looked upon fire, or the sun, as the source of being, the personification or embodiment of the creative power, and thus worshipped what seemed to be the great author of life. In this way religion was evolved.2 With government and religion thus instituted, what has been the development of the civic and the religious idea? History shows intolerance to all interference. Whatever was opposed to the well-being of the representatives of the government, to the will of those in power, was wrong; whatever was opposed to the interests of the votaries of religion was wicked and a sin. Thus was created

^{2.} Clifford Howard: Sex Worship.

prohibition. From the earliest epoch of recorded time down to the present day we find everywhere a desire for self-perpetuation and self-aggrandizement; everywhere is noted intolerance of every kind. Whatever is, is right, because those in power have said so; whatever is opposed to the prevalent religion is wrong and a sin, because the existing authorities have so decreed.

The philosophic mind, recognizing facts in the world's history, revolts against such a decision. The matter of right and wrong is too often purely conventional or geographical. An appreciation of the causes which have determined conviction in the past, a realization of the elements, which in bygone ages have influenced thought and crystallized opinion, force the twentieth century student of evolution to reach out, in the light of his experience and erudition, for a more equitable definition of right and wrong, of virtue and sin, and induce him, in the spirit of justice, to seek for a better understanding of the truth. No longer the slave of superstition, no longer controlled in thought and action by priest-craft or governmental domination, the sincere seeker for the truth interrogates nature herself for an explanation of those principles of right living which are just and true and which must be conducive to the welfarc of all. He relies on his intelligence rather than on the assertion of any authority. He knows that evolution is progressive and he realizes that far from being heresy for him to inquire regarding life processes, it becomes his highest duty to study man himself and to try as best he can to solve for himself the riddle of existence. At the outset, if he is honest, he admits that we know at best but in part. The truth of to-day becomes the error of to-morrow, or, more properly speaking, the truth is always the same, but our appreciation of it changes as varying circumstances permit a more comprehensive understanding. For this reason no man can assert that he is infallible in his judgment. He is right only so far as his knowledge permits him to judge and his reason and intelligence allow him to decide. When he knows more he may determine quite differently, and what at one time he thought was right may at another time be considered wrong. He will also admit that what applies to him applies also to others. If his opinion is not in accord with that of his neighbor, one may be wrong and perhaps both are wrong. There is also the possibility that, like the knights of old, who looked on different sides of the shield, both may be right. No other reasoning is logical, no other reasoning is just, no other reasoning can be fair-minded. We start, then, with the assumption that precedent is not authority, that knowledge at best is fragmentary and imperfect, that dictatorial assertions are illogical, that "Charity is the word for all."

Man, in his tribal relationship, submitted to quasi-parental authority and enjoyed a maximum of liberty, that is, self-dictated action, because his mode of life did not endanger the life or liberty of his neighbor. As communities were formed, laws and sanitary regulations became necessary, in order that no one should injure another, even inadvertently. These regulations varied, and vary to-day, in accordance with the knowledge and intelligence of the community, and to the extent those in authority see fit or advisable to determine. As civilization advanced, as cities devel-

oped, the comfort and well-being of the citizen became the subject of an increasing public concern, and police measures were adopted to secure more surely and render more effective those conditions which, in the judgment of the recognized authorities, would advance the interests of the community. Religion also advanced. From symbolic worship, through the long series of emblems, each representing the creative and animating force in life, there evolved the forms of religion which exist to-day. The priests of all religions, like the rulers of all nations, were men, subject like other men to the same limitations of judgment, the same ambitions and often the same thirst for power and domination. They were the forceful men of their generation, but they were not infallible. In the light of the knowledge of to-day, many of their deeds can be recognized as ennobling, but, it must be acknowledged, self-interest often determined their action, and selfish ends, rather than the good of the community, were often the incentives of their decisions. With this understanding of the circumstances of the past that have molded opinion and in the light of our appreciation of the efforts of the present and the possibilities of the future, let us consider some essentials of modern life which are conducive to happiness, the things that to-day, so far as we know, are really worth while.

First of all, there is health, which has been defined as a proper performance of all bodily functions and their consistent correlation. This means much and permits of much variation when applied to the individual case. But the main proposition is true. Health is of the first consideration, but in most instances it must be lost or impaired before its value is appreciated. All men and women will agree with me in my statement but very few realize the truth of my assertion, to the extent that they make the care of the health, as they should do, the chief object of their study—the most serious and important matter which can engage their attention. Let me recall to you by a very homely example how a slight deviation from good health influences the entire economy. Consider a corn or even a tight shoe. It is insignificant, but it robs life for the time being of all charm; it annihilates altruism; it destroys our interest in art, literature or music; it interferes with the proper performance of business; it ruins the best disposition; it monopolizes our attention and makes life almost unendurable. Thus does a trivial circumstance affect us in every Other illustrations might be given, but the truth way most seriously. regarding these matters is universally acknowledged. There is a cause for every disease and a reason for every disaster. Since the preservation of health is the most important object of every man's concern, it would seem to be evident that the study of the means to avoid disease and disaster is the most important matter that can possibly engage the consideration of every student. This truth also is admitted, but its practical application is, through ignorance or inattention, only too often neglected. Herein lies the greatest folly of modern times. In the craze for wealth, in the disregard for the building up of character, the first essential of happiness is disregarded and at the end the cry "Vanity of Vanities" but poorly expresses the despair of ignorance and the remorse of deception.

The science of health is called hygiene. It includes the study of all

modes of life at variance with the recognized method which experience has demonstrated to be best calculated to secure the well-being of the individual. It treats of prophylaxis, or the art of preventing disease, but to exploit preventive measures satisfactorily it must deal with facts and must reason from eause to effect. This means education with all that the word implies, and a rational education, to be effective, must begin at the beginning. It has been said, and I believe truthfully, that the education of the child should begin before its birth. Its ancestors should be educated, or at least should be able to bequeath to the child a modicum of physical well-being which is only possible when the parents themselves are healthy. This means that many marriages are ill advised; this means that something more than the pangs of love should be considered when two individuals of opposite sex contemplate a co-partnership, the result of which, normally and naturally, is an increase in the human race. Each child, even when yet unborn, has certain inalienable rights, chief among which is the right to live. The great mortality of infant life is recognized, but it is unjust, wrong and criminal to bring into the world a child whose life is jeopardized by an inherited disease or who is doomed to develop into a dependent, defective or delinquent, and thus become a menace or a burden to our society. Visit our state institutions at Lincoln or Geneva if you would fully appreciate the importance of this matter. You will see there in the Home for Feeble-Minded Children and in the Training School for Girls, in addition to the victims of man's lust, countless examples of degeneracy, many of which are directly due to improper marriages, which should never have taken place. The unfortunates in these institutions receive tender and consistent care, and I am proud that the great State of Illinois has made ample provision for their maintenance. As the creatures of our civilization, they are entitled to consideration and protection. At the same time, the mind revolts at the thought that the creation of such unhappy beings shall continue indefinitely. An intelligent intervention must occur and must find expression in scientifie prophylaxis.

There has been discussion as to the relative importance of heredity and environment in the causation of many sociologic evils. Let us frankly acknowledge that each condition is of importance as an etiologic factor, and, rather than indulge in an academic controversy, let us see to what extent both can be influenced by a consistent attempt at improvement. Certain matters relating to heredity are well known, in fact, universally acknowledged. Breeders of stock and poultry make use of this knowledge in a most practical manner. Certain facts relating to heredity in man are also equally well known. They fail of application because the same care that is given to cattle is too often denied the human race. In all civilized countries certain requirements must be fulfilled before a marriage takes place. In all states of the Union some form of approval of a proposed marriage is required, but the conditions of such approval vary greatly. The desirability of a procedure of this kind is admitted. It is, however, not often admitted in practice that all persons about to be married have a right to know that their bodies will not be contaminated through this relation by reason of already existing disease or taint, or that

their progeny will not be the victims of hereditary or pre-existing disease.3 Certain facts regarding heredity have been demonstrated. The marriage of individuals afflicted with tuberculosis, that great white plague which claims for its victims one-seventh to one-ninth of the human race, may result in a progeny of diminished vitality favoring the contraction of the same disease. The children of the diseased, the habitual drunkard, the insane, or the degenerate inherit disease, a weakened constitution or an impaired mentality. From such offspring, through many generations, has been perpetuated a race of criminals. From such offspring have been developed those monsters of depravity and vice whose acts have horrified the civilized world.

Now, the remedy is very simple. It consists in requiring all applicants for a marriage license to show a certificate of health. This is certainly not unreasonable. Every sensible man and woman should, it would seem, very gladly comply with this requirement. And yet, as Parker of Ohio has pointed out, the difficulties in securing proper legislation on this subject have been well-nigh insurmountable.4 Restrictions relative to minority, consanguinity and miscegenation are imposed in all states and due care is taken to secure proper identification of the contracting parties, as well as information relating to age, color, previous marriage or divorce and other matters of statistical importance. In Marvland, Mississippi and certain other states the authorities may require an affidavit that no legal obstacle exists, and in Maine residents of that state must record their intention in the office of the town clerk, in a book which is kept open for public inspection. In Michigan, all justices and ministers are authorized and required to examine at least one of the parties on oath as to the legality of the intended marriage. Judging from reports of Chicago newspapers, in reference to certain marriages at St. Joseph, this examination at times must be most casual. In Wisconsin, one of the contracting parties must be examined on oath unless the minister, justice or judge is satisfied that there is no legal impediment to the marriage. In Ohio, notice is published in the presence of the congregation on two different days of public worship, the first at least ten days previous to such marriage, or an application shall be made to the probate judge who issues a license, if he is satisfied there is no legal impediment to the marriage. In Pennsylvania and Wyoming, the county clerk must be satisfied that there is no legal obstacle, and in Kentucky and Tennessee, a bond may be required in case of doubt.⁵ South Dakota, in 1899, was the first state to pass a definite law having regard to the health of the contracting parties. It is known as the "Creel Bill," and requires all applicants for a marriage license to present a certificate from an examining medical board, consisting of three physicians in each county appointed by the county judge. This certificate must show that the applicant is free from venereal infection, habitual drunkenness, insanity and tuberculosis. Michigan has followed the example of South Dakota, but similar bills

^{3.} A. H. Burr: Regulation of Marriage for the Prevention of Communicable and Hereditary Diseases, Journ. of Am. Med. Assn., Dec. 8, 1898.
4. C. W. Parker: Legislative Problems in the Regulation of Marriage, Journ. Am. Med. Assn., March 3, 1900.
5. A. W. Butler, Secretary Board of State Charities of Indiana: Personal communication.

have failed before the general assemblies of Ohio, Wisconsin and Minnesota.6 Recent legislation viewed in its entirety discloses the unmistakable trend of the times. The legislature of Kansas, in 1903, enacted a very stringent law which provides that "no woman under the age of 45 or man of any age, except he marry a woman over the age of 45, either of whom is epileptic, imbecile, feeble-minded or afflicted with insanity, shall hereafter intermarry or marry any other person within this state. It is also hereby made unlawful for any person to marry any such epileptic, imbecile or feeble-minded person or any one afflicted with insanity, or any person who has ever been so afflicted. Children born after a parent was insane, shall not marry except under the above-named conditions." The Ohio law was amended April 8, 1904, by the addition of a clause as follows: "And no license shall be granted where either of the parties applicants therefor is an habitual drunkard, epileptic, imbecile or insane, or who at the time of making application for such license is under the influence of any intoxicating liquor or narcotic drug." In New Jersey, the law in force since March, 1904, decrees that it shall be unlawful for any person who has been confined in a public asylum or institution as an epileptic, or insane or feeble-minded patient, to intermarry in this state without a certificate from a regularly licensed physician in this state that such person has been completely cured of such insanity, etc., and that there is no probability that such person will transmit any of such defects or disabilities to the issue of such marriage; any person of sound mind who shall intermarry with any such epileptic, etc., with knowledge of his or her disability, or who shall advise, aid, abet or assist in procuring any marriage contrary to the provisions of this act, shall be guilty. This is practically the same as the law which was adopted in Connecticut in 1902.

The Indiana law, approved March 6, 1905, is the latest and the most comprehensive legislation on this subject. It provides for a written and verified application to the clerk of the Circuit Court containing statistical information regarding both parties, which application, together with the license and certificate of marriage, is recorded in a book of public record. In case the clerk is in doubt regarding the right to a license, he at once and without formality or expense, refers the matter to the judge of his court, who at the earliest practicable time, decides finally regarding the applicants' right to a license. The law further provides as follows: "No license to marry shall be issued where either of the contracting parties is an imbecile, epileptic, of unsound mind or under guardianship as a person of unsound mind, nor to any male person who is or has been within five years an inmate of any county asylum or home for indigent persons, unless it satisfactorily appears that the cause of such condition has been removed and that such male applicant is able to support a family and likely to so continue; nor shall any license issue when either of the contracting parties is afflicted with a transmissible disease, or at the time of making application is under the influence of an intoxicating liquor or narcotic drug." Here is an example of a law which regulates without injury and which is unmistakably for the good of the community. Let us

^{6.} A. H. Burr: Unsanitary Marriages and Their Prevention by State Regulations. Med. Summary, July, 1905.

have more laws of a similar character and let our altruism find expression in agitation until the crimes against the future citizens of the state are abolished by a judicious legislation, based upon a rational prophylaxis.

After the child is born, with all of its inherited potentialities, the environment becomes a matter of interest and importance. Here hygiene has a leading rôle to play. The infant has at best but a feeble hold on life, and unless the utmost care is given and the most systematic hygiene prevails, the young life is soon extinguished. Fortunately for humanity, the medical profession is ever ready to advise without thanks and without cost. In diseased conditions of the mother, the infant must be provided with a healthy wet-nurse or fed on modified milk. In many cities, provision is made for the distribution of pure milk and everywhere a sterilizer can be made available, even to the poorest citizen. All municipalities can prohibit the sale of impure or adulterated milk, because, in addition to the possible danger of the tubercle bacillus, it is essential to supply a nutritious food upon which the infant may thrive. As I had occasion to say at the St. Louis meeting of the International American Congress on Tuberculosis, all infants are potential citizens of the state, and have the right to live. If the home is insanitary, if the infant for any reason can not there receive the special care that its welfare demands, a temporary home should be provided, very much on the plan that has been adopted in the case of the illegitimate, so that this inherent right of the infant shall not be abrogated. Such a provision, moreover, enables the state to fulfill its manifest duty to act, when necessary, in loco parentis, in the case of all dependents. In addition, such action, while humanitarian and philanthropic, is economic in the highest degree. It is impossible to estimate the value of rational supervision of this character at an early age, not only in instances of tuberculosis, but also in the case of all dependents, defectives and delinquents. It is a rational prophylaxis, and if consistenly applied would be of inestimable advantage.8 When the infant has become a child, and especially after the child has lived through the first five years of life, it is realized that the period of greatest mortality is passed. If now the child is sound and well, if there are no hereditary tendencies to be guarded against, there is reasonable probability that the estimated expectancy will be lived out, and, barring accidents, that adult life will be reached. At the same time, there are dangers to be feared, developmental errors to be recognized and corrected, and serious deviations from the normal condition to be noted.9 The most efficient treatment of these detrimental occurrences is the prophylactic treatment, the treatment which anticipates and prevents. As the young plant thrives only in suitable soil, so the young animal of the human race can grow perfectly only with proper environment. Pure air, pure food and pure water should be vouchsafed to every child. Without these means to consistent development no child is free from danger. No duty of civilization is

^{7.} Hastings, H. Hart: The Physician and the Illegitimate Child, Ill. Med. Journ., August, 1902.

^{8.} Denslow Lewis: The Management of Our Charity Hospitals, Ill. Med. Journ.. March, 1903.

^{9.} Denslow Lewis: The Child's Proper Development. Doctors' Magazine, February, 1900.

greater than adequate provision for the supply of these essentials to the growing generation. Tenement inspectors should see to it that every house is sanitary. Food inspectors should not only condemn but destroy all meat and vegetables that are unsuited for use, and our municipal laboratories should make sure that the public supply of milk is free from disease germs and unadulterated. The municipality must also furnish an adequate supply of pure water, or, if the supply becomes contaminated, must give timely warning.

I can not too forcibly, in this connection, insist on the value of a knowledge of hygiene. If the public could only realize the importance of knowledge and the disastrous results of ignorance, thousands of lives would be saved and untold anguish would be averted. How many know that tubercle bacillus is found in milk and that the chicf cause of typhoid fever is found in impure water? How many realize the necessity of proper plumbing and the importance of proper sewage? This is no abstract proposition of science. The life of your own child may depend on the practical application of your knowledge of these elements of preventive medicine. In the case of older children of the school age, ignorance of hygiene is most disastrous in its results. Development is not uniformly progressive. Many factors intervene, and here, as everywhere, prevention is of the first importance. It should be realized at all times and at all ages that the attainment and preservation of health is a matter of supreme concern. Disastrous in the extreme, during childhood, are deviations from consistent attention to health. Education is necessary and of value, but all education is false and worthless if it is procured at the cxpense of health. For this reason, intelligent surveillance is important in order that serious conditions may be recognized. The anemic child is a candidate for tuberculosis. The weak, sickly child is in danger. Deficient hygiene and insufficient nourishment favor the development of future dependents on the state. We have inspectors of different kind, we have school teachers and we have the police. Let them all open their eyes and see what there is to see. Let them take notice of sanitary environment of factory, shop or school, and let them report what they find. Education is a failure and a farce if due regard is not had for the child's well-being. All that may be learned is the veriest folly if health is lost in the learning. All the accomplishments of the world are valueless if, in their acquirement, the constitution is impaired. Above all others, parents should realize the possibilities in reference to their children. They should understand what constitutes hygiene and should know that many of the luxuries with which they surround their children, are often detrimental and dangerous. The child is essentially a young animal, and should be fed and cared for at least with the same consideration that farmers bcstow upon their stock. The question whether or not a certain article of diet will hurt the child should not be raised, but the parent should consider if it will do him any good. The mistake should not be made of attempting to "harden" the child by submitting him to undue exposure, but the value of pure air and sunshine should be appreciated. Above all, the physician should be consulted while the child is well. Judicious professional advice, taking cognizance of all surroundings and realizing all possibilities, is of importance in directing the daily life of the child, so that any developmental error may receive timely attention, and any faulty method which interferes with the child's well-being may be corrected.¹⁰

Philanthropy does much for the carc of the children of the poor. In providing country outings, fresh air sanitaria and the crèche there is a consistent attempt to improve conditions. Nevertheless, ignorance militates against our best endcavors. The people must know the truth regarding the dangers incident to childhood and the child itself should be taught intelligently, systematically and consistently regarding hygiene and physiology. The legislature has apparently recognized this necessity, for due provision is made in Illinois for obligatory instruction, by virtue of the so-called Illinois Temperance Education Law, enacted in 1897. This law provides that the nature of alcoholic drinks and other narcotics and their effects on the human system shall be taught in connection with the various divisions of physiology and hygiene, as thoroughly as are other branches, in all schools under state control or supported wholly or in part by public money, and also in all schools connected with reformatory institutions. In order that there be no mistake about the requirements it is stated that all pupils in the above-mentioned schools below the second year of the high school and above the third year of school work, computing from the beginning of the lowest primary year, or in corresponding classes of ungraded schools, shall be taught and shall study this subject every year from suitable text-books in the hands of all pupils, for not less than four lessons a week for ten or more weeks of each year, and must pass the same tests in this as in other studies. It is further stated that for students below high-school grade such text-books shall give at least one-fifth their space, and for students of high-school grade, shall give not less than twenty pages to the nature and effects of alcoholic drinks and narcotics. The pages on this subject, in a separate chapter at the end of the book, shall not be counted in determining the minimum. And furthermore, apparently to make sure that the teachers shall know what they are supposed to be teaching, the law reads: "In all normal schools, teachers' training classes and teachers' institutes, adequate time and attention shall be given to instruction in the best methods of teaching this branch, and no teacher shall be licensed who has not passed a satisfactory examination in this subject and the best methods of teaching it." Let me ask you, in all seriousness, what all this means? Is it an attempt to teach the essentials of physiology and hygiene? Does it tell the children about the organs and functions of the body and indicate the dangers of ignorance by exposition of the truth? Or is it an attempt to teach merely the terrible effects of alcohol on the body and the awful consequences that result from smoking tobacco? I venture the prediction that the force of this teaching is dissipated, when the child, at noon-time, is sent out by its father to get a pail of beer for the family dinner or when the teacher is observed to leave the school room with a cigar in his mouth.

Lest I be misjudged in regard to my understanding of the effects of

^{10.} Denslow Lewis: The Value of Publicity Regarding Tuberculosis. Med. Record, Jan. 14, 1905.

alcohol and tobaeeo, I beg to refer to my address at Portland, Ore., last July, in which I stated that I believe alcohol and tobacco to be poisons, just as much as strychnia is a poison. I recognize, however, as a fact of our eivilization that our method of life appears to ereate a demand for indulgence in these poisons on the part of many of its members. I will not ask, nor will I seek to answer, if this be right or wrong. My individual views as to the morality of the use of stimulants and nareotics, or, indeed, the views of any man on this subject, are immaterial to a proper consideration of their effect on morbidity and mortality. Recognition is not sanction, but it is most absurd to disregard conditions simply because we object to them, and it is irrational in the extreme to refuse to see facts because they are repugnant to our sense of propriety. Residence and race modify the significance of indulgence in alcohol. European people, who make use of beer and wine as an integral part of their daily ration are, in many instances, no more likely to indulge in alcohol to excess than they are to eat too much meat, for one is as much an article of diet for them as the other. The habits of life and the family eustoms are determining factors in the prognosis. Transplanted to American soil, our foreign-born eitizens and their descendants often inherit the tendencies and tastes of their forefathers and continue in the moderate use of alcohol without detriment to their health. 11 Now, I will admit that it is desirable to teach regarding the pernicious effects of alcohol and tobacco. I will admit, as our legislature has decided, that the importance of the subject requires four hours a week for ten weeks. I ean not admit, from an examination of the text-books recommended and from personal investigation of the methods in use, that much good results from the present method of instruction. The text-books comply with the law and that is the best that ean be said of most of them. The two books in use in Cook County are absurdly inadequate. I commend the Oral Lesson Book in Hygiene by Miriek. It is admirably adapted for the kindergarten. It tells the teacher how to teach. I like the high-school books of Overton, Baldwin and Hewes, but they omit all reference to the organs of reproduction; they speak very sparingly of the functions of the kidney, and not one of them tells the child that the bowels should move every day. I would not underestimate the department of hygiene that teaches the evil effects of aleohol and narcoties, but I do wish to make a strong plea for a broader and more scholarly and scientific study in our schools of the subject of physiology and hygiene.

The proper way to teach these sciences is first of all to teach the teachers. This can only be done by a proper instructor, who should be a medical man, thoroughly qualified to give instruction in this department of science. I remember my experience as a student at the University of Michigan some thirty years ago. The first year of my residence there, physiology was attached to another chair and was taught in an indifferent manner, which was most uninteresting. The second year, Prof. Burt G. Wilder eame on from Cornell University for several weeks and his lectures, demonstrations and vivisections elothed the subject with renewed

^{11.} Denslow Lewis: The Medical Examiner and His Work. Med. Examiner and Practitioner, August, 1905.

interest and made the study of physiology most instructive and entertaining. If it is worth while to teach physiology it should be taught well. This is only possible if the instructor is thoroughly competent, both as a teacher and a scientist. We have in our public schools special teachers for drawing, music and German. I advise a competent specialist for the teaching of physiology as well. Few teachers, I venture to say, appreciate the fact, that in being privileged to teach physiology and hygiene, they have committed to their charge the important task of influencing the health of the future citizens of this Republic. The teacher knows only too well, in many instances, how detrimental to the development of health and character is the home environment. How salutary might be his influence for the child's welfare if he himself had been taught and was

justified in speaking out plainly in the exposition of the truth!

If physiology and hygiene are to be taught, and surely there is nothing more important that can be taught, let us teach the truth. There is no immodesty in a description of life processes. If our young women are going to study art and literature, why not let them study about themselves? Why not tell them the truth? If our young men are to be thoroughly equipped for life, is it not necessary that they should receive instructions "which will lead them to hold their bodies as holy temples of the divine self of manhood?" Let us make no mistake about these important matters which have to do with health and consequently with happiness. Let us acknowledge our duty to give warning of the dangers that confront the child. We show our children the automobile and the railroad train. We give warning of the danger of crossing the street or track when these instruments of death are in sight. We explain the mechanism of the modern locomotive and motor car, wonderful triumphs of man's skill, which can be operated to exceed a rate of a mile a minute. We read accounts of accidents that occur only too frequently and we impress upon the child's mind the necessity of extreme caution and constant watchfulness. When a prominent man dies from the effect of carelessness or accident in the use of fire-arms, we seize the opportunity to show the folly of handling revolvers, guns or sharp knives, and here again our warning is most earnest because we realize how easily our own child may be a victim of some accident. So it is regarding all details of the child's life. We wish to warn against everything that can harm, to commend everything that can benefit.

Do we really do as we wish? Do we really warn against the greatest dangers? If we do not, why not? There are several reasons, as I understand them. In the first place, there is ignorance on the part of the parents, which leads to indifference, or at least relative indifference. The parents are the protectors of their children, who look up to them for counsel and advice. Too often, the father is himself ignorant and careless. Engrossed in the struggle for existence he may forget the needs of his children, if he even knows them, and he overlooks the possibility of danger, especially to his child. The mother also has her struggles, her duties and her pleasures. She has rarely been taught herself; however much she may know about art, literature and travel, she knows but little about physiology and hygiene, and she has no realization of the actual

danger that menaces her child on every hand. Did the mothers of America but know the facts, could they realize to what extent communicable and preventable disease exists all about them and their children, there would be an awakening of public opinion which would save thousands of the innocent from disease and disaster.¹²

Another reason of our failure to protect the child is ignorance of the extent of the danger and false modesty which, I am happy to say, with the advance of higher education, is gradually diminishing. I can remember when we called the lower extremities "limbs" and when all reference to the bath was considered impolite. I remember when a healthy appetite in a girl was unladylike and a languid manner and bashful reticence were supposed to indicate refinement. The glow of health was countrified and high-heeled shoes and tight lacing were regarded as essentials of the wellbred young lady. We have passed that stage of our national development, and modern athletics, with physical training, have given us a healthier and happier generation of young women, better qualified to be the wives and helpmates of our men and the mothers of our children. Innocence is not ignorance and modesty is most pernicious if it means that we may not know the dangers of our civilization and how to meet them. If we persist in such denial, we do not regard, as our first duty, the preservation of the human race, and we share in the responsibility of destruction by ignoring what we know to be the only means of prevention. In this connection I can not go into detail. You know of the diseases of childhood. You know how vaccination has almost abolished smallpox. I have referred to tuberculosis, typhoid fever and diphtheria, and it suffices to say that there are other communicable discases, contracted often innocently, which, if they do not kill at once, undermine the constitution most seriously and are even transmitted to future generations. The extent to which such diseases exist among children is not generally known. In the sixth biennial report of our State Training School for Girls, issued July 1, 1904, the superintendent says: "Moral depravity among both girls and boys is certainly alarming, for it is not all among the neglected ones. The parents do not know enough about their children and talk enough to them about the many things they ought to know and the dangers to be encountered. We wish to be the means of educating the parents as well as the children." And the physician says: "As in former years, the majority of our girls have come to us in need of medical attention. Venereal disease is so prevalent as to be a scourge. One hundred and seventy, out of the 232 girls admitted in the two years, came in some stage of gonorrhea and with various complications from cystitis to salpingitis. Ten had syphilis in addition, one had syphilis alone, and several had chancroids." I have seen there victims of venereal disease of eleven, ten and even nine years of age, and the disease was not hereditary or acquired innocently. It has also been my privilege to sit on the bench with Judge Mack of the Cook County Juvenile Court. It is horrifying to note the instances of disease and depravity in young children that come before him at almost every session of his court. They indicate to my mind the importance of system-

^{12.} Denslow Lewis: The Limitation of the Venereal Diseases. Medico-Legal Journ., June, 1903.

atic prevention by teaching the truth. The juvenile court is a wonderful instrumentality for good. It removes the child from vicious and insanitary environment. It appoints a guardian for each child to look after its welfare. It is an object lesson of applied philanthropy, and its chief teaching to me is the need of consistent education.

I have spoken on this subject frequently in our medical meetings during the past six or seven years. At first the profession refused to listen. My distinguished friend, Howard Kelly of Baltimore, said that the discussion is attended with more or less filth, and we besmirch ourselves by discussing it in public.13 He has since then, however, read a paper along these same lines, so it is reasonable to assume that he disregards any possible ill effect to himself in his appreciation of the necessity of scientific investigation. 14 I tried last year to induce the Committee of the Chicago Medical Society to arrange a public lecture on some of these topics. I offered my services, which were declined. I am pleased to say, however, that this year the fear of criticism or whatever else had thus far deterred the committee, gave way to a realization of the needs of the community and the first public lecture of the course was delivered, to men only, by Dr. William T. Belfield on the subject of sexual hygiene. It was, as would be expected from the distinguished essayist, an admirable presentation of the danger of ignorance, a true exposition, in simple language free from technicalities, of the effects of indiscretion and a warning against the advertising quack and his disreputable methods. remarks were listened to for nearly two hours with breathless interest by an audience, chiefly of young men and boys, which tested the capacity of the lecture room. It recalled to my mind the occasion seven vears ago, when at my suggestion, the Physicians' Club of Chicago considcred the same subject. I have now ventured to suggest to the committee the name of Dr. G. Frank Lydston, whose medico-sociologic writings are authoritative. I have urged that he and others like him be asked to lecture on subjects connected with sex relationship, so that our public lectures shall be what the people want and need. I can not say if his personality will be acceptable or if the good work will go on. Nevertheless, I rejoice that a commencement has been made. The youth of our country demand information regarding themselves, and this knowledge should not be refused them. The details of instruction can be worked out in each locality according to individual needs, and in accordance with existing conditions. Whether such instruction is best given by the parents, by the physician, in the school or in mothers' meetings or women's clubs, I will not now attempt to say. But the great fact remains and will persist. Somewhere in the curriculum from the kindergarten to the university, we must tell our children the truth about themselves and the dangers which confront them. Every consideration of duty, of honor, of propriety and of consistency makes such an education imperative.

My reference to the hygiene of adult life will be brief. My ideas on this subject have been often expressed and require no repetition now. I recall

^{13.} Denslow Lewis: The Gynecologic Consideration of the Sexual Act, p. 20.
14. Howard A. Kelly: What is the Right Attitude of the Medical Profession Toward the Social Evil? Journ. Am. Med. Assn., March 4, 1905.

the case of a wealthy dry goods merchant, whom I examined two years ago for an insurance policy of \$150,000. His magnificent store was fitted up most beautifully, but his own office reminded me of a prison cell. In this small room, fronting on an alley, lighted all day by electricity and poorly ventilated by one small window, this merchant prince submitted in ignorance to a most insanitary environment. His ease is the ease of thousands who jeopardize health by ignorance of the first principles of hygiene. Only when health is impaired do many of our business men realize the folly of an inconsistent, because unprofitable, mode of life. The struggle for supremacy causes neglect of the laws of hygiene, and in many instances wealth is attained at the cost of health and the attainment becomes worthless. Knowledge of the truth here as elsewhere is of chief importance. The danger of overcrowding, of deficient air supply and of contaminated water supply should be realized. Facts relative to disease should be known. The possibility of drug addiction should be realized; above all, the adult should understand that happiness is only attained by right living under hygienic conditions and by the development of a consistent character which, as Roosevelt says, is in the long run the decisive factor in the life of individuals and of nations alike. The cowardice of false modesty should be condemned and every man should be eager and anxious to know the truth.

Throughout the ages there has risen up, at different times, men who were inspired by a love of humanity and who sought to tell the truth as they understood it. Invariably their contemporaries have maligned them and only too often they have suffered calumny, disgrace and even martyrdom. Nevertheless, the prophetic spirit lives, and even in our times there are fearless men who dare to do what they believe to be right. Their love for humanity is real and uninfluenced by any possible criticism. They know their duty and they dare to do it, even if it means loss of prestige, influence and temporal interests. They hazard all for love of their fellowman, for the purpose of bearing faithful witness to the truth. Such men are marked men. They are the beacon lights of the past, the inspiration of the present and the hope of the future. They may live in history, but oftentimes even that justice is denied them, and their very names are forgotten. Nevertheless, their influence remains and the work that they have done in the cause of humanity is not done in vain.

92 State Street.

ALCOHOL AND THE MIND.*

CHAS. L. HAMILTON, M.D.

DWIGHT.

Alcohol, acting as an anesthetic on the nervous system, impairs nerve function in both cell and fiber, weakening conductive activity in the latter, impairing in the brain cell its ability to interpret impressions from the periphery, the transmission of motor impulse and the

^{*} Read at a meeting of the Livingston County Medical Society.

power of thought. In addition, direct action on intracranial structures and the effect of the resultant toxins in impairing their nutrition lead to disease of these structures and also to impairment of general nutrition. We now accept the fact that insanity is not in itself a disease so much as a symptom of a disordered bodily state; that it is only "a symptom of perverted function, or of disease of the brain that impairs or destroys mental integrity." Only a healthy brain cell can functionate in a normal way, and, owing to its extreme delicacy, it responds very quickly to alcoholic disturbance. Alcohol, therefore, affects the entire mental constitution, covering intellect, emotions, moral nature, as well as the will and impulses. Its prolonged use as a beverage, whether moderately or not, results in blunted perception, clouded reason, defective memory, impaired sensation, weakened will and a changed moral sense, all of which contribute to the change in the disposition of the individual and in his conduct as well.

In determining the sanity of a person before the courts, we as physicians are to judge by his thoughts, feelings and conduct. It is no wonder that through the continuance of alcoholic indulgence the victim crosses the border line between sanity and insanity, as perverted perception may lead to hallucinations and illusions, the former being "perception without an object"; the latter, faulty perception, or rather false interpretation of objects that really exist. These may affect any of the senses and often lead to delusions. In alcoholic cases these are prone to be persecutory in character and to be directed against wife, father, mother or intimate friend. As moral sentiment weakens and as sexual power suffers from the firing of the imagination, from over sexual indulgence, from suspicions, etc., which follow the long continued use of alcohol, these delusions often pertain to the sexual organs, to the wife's infidelity, etc. Indeed, Dr. Norbury says: "I believe my own experience justifies me in saying that sexual delusions, especially of infidelity, are almost pathognomonic of alcoholic mental perversion." On account of sexual delusions crimes may be committed, and it is said that "between 75 and 80 per cent. of the sexual crimes against persons are, according to the striking and trustworthy statistics for Germany, compiled by Dr. Baer of Berlin, due to alcohol." The percentage of cases of insanity due to liquor under modern investigation is gradually rising and is variously stated at from 15 to 50 per cent. of the total. Dr. Clouston says: "My alcoholic lunatics have risen from an average of 151/2 per cent in the years 1874 to 1888 to 24 per cent. in 1900." According to H. Weir Mitchell, "The number of insane as a result of alcoholic habits is large and relatively increasing. Conservative estimates both in this country and Europe show that from 15 per cent. to 25 per cent. of the admissions to insanc hospitals are cases in which alcohol is the prominent etiological factor." The Report of the Municipal Authorities at Glasgow, Scotland states: "Out of 565 admissions to the Glasgow District Asylum and 213 admissions to observation wards of poorhouses during twelve months (1903) no less than 33 per cent, were traceable to alcoholic drinks as

a cause." Dr. Joseph Collins says: "The intemperate use of alcohol is directly or indirectly the commonest cause of insanity. In fact, it is so nearly the sole cause that if alcohol could be stamped out for a century insanity would undoubtedly shrink in prevalence 75 per cent." In Germany it is reported that the German association for the investigation of mental disease found that 73 per cent. of the cases of mental disorder in the state asylums were the result of intemperance. Mental impairment in chronic alcoholics varies in degree from simple dulling of normal intellect with impairment of memory, selfishness, irritability, change in the moral nature, etc., to trance conditions, delirum tremens. alcoholic epilepsy and actual insanity resembling any of the various forms. Although not usually classed as an insanity, the medico-legal questions which arise in cases of alcoholic trance justify us in speaking of it in this article. The term is used to describe a condition in chronic alcoholics wherein the patient may go about his daily duties, his friends noticing very little in his actions out of the ordinary except that he seems slightly under the influence of liquor. He may collect money, make sales, etc., but the next day have no recollection of his actions or of his whereabouts during the preceding day. The condition seems to be one of automatism, the man attending to business largely as a matter of habit, and, at the time the acts are committed, he may have consciousness of them, but there is apparent suspension of all memory, he having no conception of his actual state. Crime may be committed, the patient having no apparent plan or motive and no recollection of the act nor the circumstances surrounding it. The condition may last for a few minutes or hours, or it may extend over several days. Individuals in this condition have found themselves, when full consciousness returned, hundreds of miles from their homes and perfectly powerless to recall any occurrence from the time they left home, how they made the journey, whom they met during the time, etc. Many cases are on record in which the victims of drink have been made the tool of designing individuals, who have induced them to enter into business contracts or to contract marriage with persons far below their social level. Clevenger records the case of an individual who took a steamer from Liverpool and awoke at sea without the slightest idea of any plan or possible motive for the trip.

It is remarkable that in chronic alcoholics delirium tremens is not more common, when we consider that by the hard drinker little attention is paid to meals, to hours of sleep, etc., and it seems now to be generally admitted that the condition is due to alcoholic irritation, loss of sleep and lack of proper nutrition of the nerve cells. As premonitory symptoms, we may mention general restlessness, irritability, loss of appetite, inability to concentrate thought, and these are soon followed by insomnia. tremor of the coarse variety more marked in the upper than in the lower extremities. The patient is very apprehensive, feels that some danger is impending, hallucinations, illusions and delusions then develop, being worse at night. These are usually, although not always,

terrifying in their nature, and in a few cases the individual sees reptiles of various kinds adding to the mental anxiety and terror. Sometimes they are of a more pleasurable character, a case which is now recalled being entertained by two turkeys, one carrying a "fiddle" and the other dancing as his part of the entertainment. In hallucinations of hearing, the patient hears noises, usually voices, which lead to delusions, as the patient often thinks the parties are speaking ill of him or plotting against him. Disordered sensation may cause him to feel insects crawling over the skin, pricking sensations, etc.; such a case under our observation some years ago was continually picking imaginary bugs from his face. Hallucinations may also affect taste and smell, while illusions are frequently noted affecting any of the special senses, commonly the sight. The patient may see a picture, book or marble statue, but when the impression reaches the brain it is misinterpreted and the victim sees it as a man, this leading to delusions through his efforts to explain the object of the man's presence. These are largely responsible for the violence sometimes seen in delirium tremens, the patient making desperate efforts to escape from those who, he thinks, are striving to do him harm. The majority of these cases recover in from one to five or six days. A few cases, however, end in chronic insanity; still others die of complications, such as heart failure, pneumonia or of a typhoid condition into which they slowly sink with a low muttering form of delirium, followed by exhaustion, coma and death. In a few cases where recovery takes place there may be mental impairment to a mild degree for some time.

The alcoholic convulsion referred to by some writers as alcoholic epilepsy, is often followed by psychic phenomena sometimes of a very dangerous character. The convulsion itself reveals nothing beyond that of the usual epileptic variety, the patient after the convulsion usually having no recollection of what has occurred. More or less mental confusion follows and there is apt to be marked restlessness with delusions, the patient thinking he is away from home and pleading pitifully to be allowed to return. The restraint necessary in such cases may lead to a brutal assault, or to homicide, and it is in the adjudication of such cases that the physician is often called upon to testify as to the patient's mental respon-

sibility.

Melancholia is probably the most common form of alcoholic insanity. It is prone to follow a debauch, the patient's friends noting that the period of remorse after such debauches usually lasts longer than common, and instead of improving after two or three days there is great irritability, insomnia, hallucinations of hearing, the latter being so pronounced that the patient hears voices, which may accuse him of having committed outrages of various kinds, or inform him that he is to be poisoned, usually also giving him the name of the party who is the cause of his trouble. He imagines officers are after him, and it is not uncommon for him to specify the officer and the crime for which he is wanted, as well as date committed and circumstances surrounding it. Melancholia may last only a few days, the patient gradually returning to a normal state; but a re-

turn to drink intensifies it so that succeeding attacks may last weeks or months; in fact, there may be no recovery, the patient gradually passing into dementia.

Various forms of mania may develop as the result of alcoholic poisoning; in this connection we first mention what is known by English writers as mania a potu. Others call it alcoholic transitory frenzy, transitory alcoholic mania, etc. It is, as its name would indicate, mania from drink, a condition better described as "mad drunk." The clinical picture is entirely different from delirium tremens with which American writers often confound it. As a rule, it lasts only a few hours, some authorities claiming never more than a day, and comes on very suddenly after the patient has taken only a few drinks, which is good evidence of individual susceptibility. Marked symptoms of mental irritation follow the least indulgence in alcohol and quickly pass into great violence, the patient breaking mirrors, smashing furniture and attacking anyone who undertakes to quiet or control him. This frenzied condition lasts a few minutes or possibly an hour or more, and is followed by stupor, the patient regaining consciousness within a few hours, without any recollection of occurrences during the maniacal period. The condition is one which strongly suggests an epileptic taint, and very closely resembles the violence of the delirium often seen in the postepileptic state.

Acute alcoholic mania is not uncommon in chronic alcoholism. Many cases do not last longer than a few days, while others show little improvement for weeks; an hereditary tendency to mental derangement is often found. Its premonitory symptoms are largely those of delirium tremens, and are sleeplessness, mental distress, frightful dreams, anorexia and nausea, followed by intense, morbid suspicions, hallucinations and delusions, the latter of a more persistent and persecutory character than is usual in delirium tremens. The patient often imagines that his friends are hostile to him and are entering into plots to injure him; that certain parties are set to keep watch over him, or that he is surrounded by detectives. He may retain consciousness of himself, of the passing time, of his surroundings, etc., and in some cases good humor and fun characterize the mania. On the other hand, he may have violent outbreaks on account of the keen feeling of injury and the violence of temper which drive him to desperation and cause him to wreak vengeance on his imaginary persecutors. Insane impulse may drive him to steal, to set fire to buildings, to shoot, etc., these tendencies being known as kleptomania, pyromania and shooting mania. If placed under proper restraint and treatment and kept from drink, the patient usually recovers rapidly, but if, as is likely to be the case, he returns to drink, each succeeding attack is more liable to result in chronic insanity, as intellect, will and moral feeling are progressively weakened.

Chronic alcoholic insanity, or, as it is sometimes termed, alcoholic persecutory insanity, so often presents the delusion of wife infidelity, which in so many cases is almost the only evidence of insanity, that it is by some writers denominated alcoholic paranoia or monomania. Re-

cent medical literature teems with recorded cases where suspicion of the wife has existed in the mind of the patient for weeks, months or years. leading in some cases to separation or even to wife murder. In the persecutory form the suspicions of the individual are usually preceded by lack of mental concentration, impairment of memory and weakening of the will; but when well developed the idea that the patient is being watched or persecuted may lead to murder or suicide. These cases are more apt to be found among the intelligent and educated, such as physicians, lawyers, etc., and the patient's arguments are often presented with such clearness as to deceive the medical expert. This class of patients is always dangerous, and the greatest care should be exercised by medical men who are consulted by either the patient or his family. The family should be acquainted with the danger, particularly if the object of suspicion is the wife. Alcoholic delusional insanity often terminates in a condition of permanent dementia.

Alcoholic dementia is generally the result of organic brain degeneration due to the continued action of alcohol, and as the mental symptoms are the result of structural degeneration, they are usually permanent and not relieved by the discontinuance of the poison. Memory impairment is the first symptom noted, and as the disease progresses it becomes more and more marked, a peculiar feature being the fact that memory for recent events is more impaired than for events which occurred months or years before. The patient will talk of incidents which he claims transpired only yesterday, but which in reality occurred a long time before. The will is weakened and there is more or less perversion of sensation, such as skin pricking, crawling of imaginary insects, or there may be painful sensations of gnawing, cutting or burning. These are much more pronounced at night and more likely to be found in the legs than in the arms. Loss of sensation is seldom complete, but it affects different areas, and cramps in the limbs are noted in the majority of cases. Convulsions constitute another step in the progressive deterioration. These are followed by impairment of motor power, which gradually increases causing paralysis of the lower limbs, which extends upward, death usually resulting from failure of heart or respiration. Delusions of an exalted character (delusions of grandeur) occur in some cases, and are ordinarily more or less fixed. In true or organic dementia due to the use of alcohol, its abandonment with proper treatment or restraint of patient from after indulgence may arrest progress in the early stages, but the patient probably never recovers his full mental power. The will and moral faculties are so greatly impaired that unless an attendant is constantly with him he can not refrain from returning to drink, which of course intensifies mental impairment. If kept from liquor, however, the motor weakness may gradually disappear, the patient living for many years. Now and then a case of dementia in the chronic alcoholic may seem to make a complete recovery. Such a case should be looked upon as one of pseudo-dementia, in which mental and motor impairment are altogether functional, and may entirely disappear to the great surprise of the physician who may have given an emphatic opinion that the patient was hopelessly insane.

It is very unfortunate that for many years the term dipsomania has been used by medical writers as a name for conditions widely different. It has often been used as a synonym of alcoholic inebriety, particularly the periodic form. Medical literature has, therefore, for many years been very confusing to the physician who has undertaken to post himself regarding alcoholic cases. Writers of the present day, especially those of experience in treating alcoholics, limit it to what the name implies, "a mania for drink." It is not in the strict sense of the term an alcoholic insanity, that is, due to the excessive or continued use of alcoholic drinks, but is truly an impulsive insanity, the victim during the attack having an uncontrollable impulse to drink or to use some narcotic. The indulgence in drink is not, as in inebriety proper, the result of physical craving for the narcotic, but of an insane impulse which the patient is powerless to resist; in other words, the victim is insane, even though he drink no liquor nor use any form of narcotic. If no alcohol be obtained, the attack of insanity would appear just the same and the insane impulse might, and in fact often does, take a different turn, causing the patient to commit larceny, or it may take the form of sexual perversion. LaGrain says: "An alcoholic patient becomes insane because he drinks; a dipsomaniac is insane before he commences to drink. Dipsomania may be complicated by alcoholic symptoms, but alcoholism never leads to dipsomania." Enlind puts it in this way: "An alcoholic patient becomes insane because he drinks; while a dipsomania patient is already insane before he commences to drink. In dipsomania there is an established pathologic state that impels." Maurice Craig, in "Psychological Medicine," just from the press, says: "The taking of alcohol is a complication of dipsomania and not a cause." In many dipsomaniacs only one, two or three attacks may occur during an entire lifetime. Under this head it is proper to refer to the condition known as "menstrual drunkenness"; while it may have its origin in the use of alcohol during menstrual periods, I firmly believe that the large majority of cases result from mental disorder and a resultant uncontrollable impulse to drink. While between periods such cases seem to be in good condition, both mental and physical, there is exhibited at the periods undoubted evidence of mental instability.

The various states of mental impairment due to alcohol are prolific causes of suicide. I have purposely omitted anything beyond the mere reference to this fact until this time, that it may be discussed more fully. It is not strange that the confirmed alcoholic, having as he must at times a consciousness that he has lost character, reputation, financial standing, business capacity, etc., through his indulgence, contemplates the ending of his miserable life through self-destruction. The disordered will, not being able to combat the impulse, which gains strength by repetition, finally drives him to commit the act. And while reliable statistics usually limit the percentage of suicides due to drink to about 9 per cent., Heller, in holding postmortems in 300 cases of suicide, found

that "the majority of all the males and especially of the men over 30 years of age (55 per cent. and 73 6/10 per cent., respectively) exhibited the well-marked signs of chronic alcoholism." Through the work of the German Association for the Investigation of Mental Discases, a report was sent out from Germany that during the year of 1902, 340 persons afflieted with mental disease suicided, of whom 298 were drunkards or the children of drunkards. Among these 340 persons were 27 children. all of whom were addicted to drink. One of the saddest facts connected with the action of alcohol on the mind is that owing to the brain instability from the long-continued or excessive use of alcohol, insanity may result from some sudden shock, such as a blow on the head, a fall, a sudden fright, serious illness in the individual, bereavement or any form of nerve shock. This may occur even though the patient may have given up the use of liquor months or years before through an almost superhuman exertion of will, through well-directed treatment or through enforced abstinence in jail, or otherwise. This form is known as postalcoholic insanity. Kerr, in his work on Inebriety, says: "Post-alcoholic insanity is the mental unsoundness which sometimes and quite unexpectedly manifests itself in inebriates long after they have altogether discontinued the use of intoxicants. In some cases the individuals have been consistent abstainers for years, but the brain instability and weakness induced by the previous alcoholic excess have remained behind and the application of an exciting cause, such as sudden bereavement or other form of nerve shoek, has disturbed the mental balance and provoked an attack of insanity. This is the explanation of the apparently unaecountable insane outbreaks of some reformed drunkards, among whom have been enthusiastic temperance workers and popular speakers."

In elosing this article, I wish to add a word to the physician who may be consulted regarding some of the conditions herein described. There has been in times past an inclination to always look at the dark side and to hold out to the relatives of the patient little or no encouragement. Savage has said: "To the alcoholic all things are possible." The victims of drink may appear to be in a hopeless condition, yet with proper care and treatment make a good recovery. Mentality in such cases often approaches such a degree of dementia that permanent insanity seems the only outcome, but in a few months the normal mentality may be apparently restored. In the more acute forms of alcoholic insanity, it is always best to give the patient's family a guarded prognosis; at the same time they should be encouraged by the statement that a large percentage recover. I certainly would not give a bad prognosis until sufficient time had been given to the scientific treatment of the case to convince me that there was little hope.

FOR RENT—First floor apartment of 7 rooms, and 3-room suite for physician adjoining, suitable for office, at northwest corner Kenmore and Buena avenues, Chicago; was occupied for four years by a physician with large practice; price, \$55.

NOTES ON THE SURGICAL ALUMNI CLINIC HELD AT RUSH MEDICAL COLLEGE, JUNE 13, 1905.

By Prof. D. W. Graham.

Reported by Dr. E. E. Irons, Assistant.

Case 1.—Pylephlebitis.—This man was operated on in this clinic six weeks ago for appendiceal abscess. He is brought in to-day to illustrate one of the complications which sometimes accompanies or follows suppurative appendicitis. On admission to the hospital he gave the following history: T. P., aged 40. Previous history negative. Five weeks before entering the hospital there suddenly began the characteristic symptoms of appendicitis: pain in the right lower abdomen, fever, vomiting and constipation. He had not been confined to bed before admission. Examination showed tenderness over the lower abdomen, rigidity of the muscles, with tumefaction most prominent a little to the right of the midline between the umbilicus and pubes. Temperature, 100.4; pulse, 90. Leucocytosis marked. The abdominal wall was opened a little to the onter side of the swelling through the right rectus muscle. On separating two adherent loops of bowel about a pint of thick greenish-yellow pns was removed with a piston syringe and by mopping with sponges. The abscess cavity extended to the floor of the pelvis behind the bladder. A fecal concretion was felt in the eavity, but was lost after several attempts to remove it. The hope is that it was crushed, has disintegrated, and come away with the discharge. But if it remains in the eavity it will, if the patient otherwise recovers, cause a persistent sinus; or, if the sinus should close, a secondary abscess. I am satisfied that a fecal concretion left in the cavity is generally the cause of the recurrent abscess which sometimes occurs, rather than the unremoved appendix to which such abscesses are usually attributed. Hence, I am more anxious always to get the concretion, whether it has escaped and is free in the cavity or still remains in the remnants of the appendix, than I am to get the appendix itself or what remains of it. In this case the appendix was so identified with the abscess wall and covered with exudate that it could not be certainly located. It was, therefore, allowed to remain as likely to do less harm than the attempt to remove it. We always like to get the appendix, however, but there will come up a case now and then where this laudable desire must yield to judgment based on experience. At the time of the operation a large tubular drain was inserted to the bottom of the pelvis. I have long ago ceased to use gauze of any kind in these cases for purposes of drainage. In a typical case I remove the tube entirely in 24, 48 or 72 hours usually, but in this case I maintained drainage longer than I would have done but for the failure to get the concretion. Examination of the pus showed colon bacilli, with a few streptocoeei. The abscess drained well, and the patient steadily improved for four weeks. His appetite was good and his temperature normal. He asked to be discharged from the hospital. Then suddenly there appeared irregular temperature. ranging from subnormal to 106, accompanied by severe rigors and sweating. This typically pyemic history has continued up to the present time. Leucocyte count, 23,000. The liver is not enlarged and reveals no tenderness on deep pressure, and aspirations repeatedly made with a large needle have given no signs of pus. Repeated examinations show no pain or tenderness or suggestion of swelling anywhere about the abdomen or pelvis. Every organ of the body has been interrogated, with negative results. No malarial parasites. Now there is only one hypothesis compatible with the history and present symptoms of this patient, and that is that there are septie thrombi in some of the tributarics of the portal vein or in some of its branches in the liver. It may be that the liver already contains pus in the form of small abscesses, or it is possible that the suppurative foci are still confined to the portal tributaries within the pelvis or lower abdomen. This is what we hope, and we shall be ready to open the abdomen on the least indication of any localized swelling or tenderness. If there were a suspicion of any circumseribed collection of pus in the liver, of course, exploration would be imperative. Pylephlebitis has been shown to be the cause of death in about 4

per cent. of all cases that die of appendicitis. All the instances of this complication that I have had in my own practice or seen in that of physicians have been cases of suppurative appendicitis in which operative measures were delayed two or more weeks after the onset of the attack.

Subsequent History.—Four days later enlargement and marked pain in the liver developed and an exploratory operation was decided on; but in a few hours the patient became suddenly and rapidly worse and the operation was abandoned. Death occurred two days later. Autopsy refused.

Case 2.—Cholelithiasis and Cholecystotomy.—Mrs. R. H., 23 years old, American. Previous history unimportant. Present trouble: Six months ago patient began to have pain in the epigastrium, more on right than on left side. It radiated around the right lower chest and into back and was so severe and cramplike in character that morphin was required. There was some nausea, but no vomiting. No radiation of pain occurred into groin. Her physician states that she was slightly jaundiced on one occasion. At first the pain continued for fifteen minutes to an hour, and the attacks came on at intervals of about a month. Recently the attacks have been more frequent, and for the past two weeks they have occurred every two days. There has been no cough, nor pain in the chest, and no pelvic disturbance. Shortly after admission to the hospital the patient was seized with a severe cramping pain in the epigastrium, extending to the right of the mid-line. It was localized at first, but later radiated around the right chest and into the back. There was repeated vomiting.

Physical Examination.—Patient is a young woman, well nourished, skin clear, no jaundice. The abdominal walls are rather thick. There is tenderness in a limited area in the cpigastrium, slightly to the right of the mid-line. The liver is not palpable. The lower border of the stomach is just above the umbilicus. Physical examination is otherwise entirely negative. Temperature, 98.4. Blood: Reds, 4,700,000; hemoglobin, 85 per cent.; leucocytes, 12,600. Urine (catheterized specimen): Sp. gr., 1032; trace of serum albumin; a number of hyaline and granular casts, with occasional red cells; no bile pigment. Stomach contents: Ewald test breakfast removed after one hour, 40 c.c.; consists of finely divided bread fragments; total acidity, 53; free HCl, 13; no blood; normal microscopic findings.

Operation.—Cholecystotomy. Gas, followed by ether. An incision four inches long was made through the edge of the right rectus from the ninth costal cartilage. A few adhesions were present about the gall bladder, which was only slightly distended, but was acutely flexed at the neck. Several small stones were palpable in the gall bladder. The cystic and common ducts were free from stones. The gall bladder was brought up into the wound, walled off with pads and opened. A small amount of mucus, together with fifteen small light-colored firm stones, varying in size from 2 to 4 mm., were removed. A rubber drainage tube was inserted into the gall-bladder, the latter being stitched with interrupted catgut sutures to the peritoneum. Careful closure of the aponeurosis below the tube was effected. One silkworm gut suture was placed on each side of the tube. Superficial sutures of horsehair were introduced. The tube was clamped for twenty-four hours with a hemostat to prevent the possible leakage of bile into the abdominal cavity between the stitches.

Subsequent History.—Daily irrigation of the gall-bladder was maintained, during which three more stones were removed. Tube removed after eight days. Uneventful recovery ensued.

The diagnosis in this case was cholelithiasis with mild cholecystitis and intermittent blocking of the cystic duct. The symptoms did not point to a kidney lesion, and the few red cells in the urine were not regarded as significant when taken in connection with the other facts of the history, although it is sometimes difficult to differentiate a right kidney lesion from one of the gall-bladder. There is a common theory that the pain is due entirely to the passing of a stone. This is incorrect,

for in many cases at least, if not in all, the pain results from distention of the gall-bladder following blocking of the duct, in part by the stone, but chiefly by swelling of the mucous membrane resulting from infection. The ultimate success of the operation depends largely on the aftertreatment, prolonged drainage and repeated irrigation, to remove both the infection and any remaining stones. We hear and read much about pain in the right shoulder in diseases of the gall-bladder and gall-duct. It must be very rare and probably should be regarded as a coincidence rather than a symptom when present. Acute flexion of the neck of the gall-bladder from ptosis of the liver or other cause is an undoubted factor in the causation of disease of the gall-bladder. When found it should be corrected, as in this case, by fixing the fundus in the upper angle of the wound against the costal arch.

Case 3.—Prepatellar bursitis (housemaid's knee). Male, 58 years old, Swedish. Previous history negative.

Present Trouble.—For several weeks patient had been engaged in work requiring the kneeling position. Two weeks ago the right knee became swollen and very tender. On admission there was a tense fluctuating swelling the size of a hen's egg lying directly over the right patella, but very little tenderness. Physical examination otherwise negative.

Operation.—Nitrous oxid anesthesia. Vertical incision three inches long over the swelling. A slightly blood-stained serous fluid escaped. Sac dissected out. Incision closed with horsehair sutures. Small tubular drain for twelve hours.

Fairly firm dressing.

Bloody fluid is generally found in the acute cases, indicating that a hemorrhage is probably always the beginning of the trouble. One of several methods might be followed in the treatment, such as simple evacuation with trocar or evacuation and injection of 95 per cent. carbolic acid. The neatest and surest method, however, is exsection of the bursa. A small tubular drain for twelve hours will provide for the escape of the small amount of oozing. A tubular drain is preferable to gauze, which acts rather as a plug until the accumulated secretions are forced out. Gas anesthesia is most suitable here. A prolonged ether or chloroform anesthesia is unnecessary, and a local cocain injection would have to be widely diffused in order to render the rather extensive dissection painless.

CASE 4.—Simple goiter and lipoma. Female, 43 years old, American, single, white; seamstress.

Family History.—Mother died of pulmonary tuberculosis at 27. Father and two brothers living and well. One sister married, who has three children. No

other members of family have goiter or malignant disease.

Previous History.—Typhoid at 12 years. Has been subject to tonsillitis with abscess formation for number of winters past. Otherwise has enjoyed good health. Patient first noticed tumor in neck seventeen years ago. The tumor grew slowly until two years ago, when it began to increase in size more rapidly, particularly during the past six months. Has been treated with electricity, iodin externally and internally, with no benefit. No difficulty in breathing. Desires removal of goiter on account of increasing size and resultant inconvenience.

Examination.—Patient is a middle-aged woman, well nourished. General condition good. Slight ptosis of right upper eyelid, present since childhood. No exophthalmos; movements and reflexes of eyes normal. A tumor mass occupies the right anterior portion of the neck, extending beyond the normal anterior border of the right sternomastoid to some distance beyond the median line. Below

it extends into the chest behind sternum. The tumor measures 10 cm. vertically by 7 cm. horizontally and is roughly hemispherical. It is soft, slightly compressible and painless. The left lobe is only slightly involved. The larynx and trachea are pushed to the left. There is a slight transmitted bruit more marked near the great vessels. No tenderness nor signs of inflammation. The heart is rather irritable and inclined to be rapid, otherwise normal. In the right inframammary region is a semi-fluctuating, movable, subcutaneous tumor, 5 cm. in diameter. Physical examination otherwise negative. Urine normal.

Operation,—Gas, followed by ether. 1. FHYROIDECTOMY. Patient in semi-reembent position. Vertical median incision 10 cm, long, extending up from sternal notch, thence obliquely for 5 cm, to right. Skin and platysma reflected. The sterno-laryngeal muscles pushed to either side from median line with the fingers. Tumor delivered. Superior and inferior thyroid vessels successively ligated as they are reached. Tumor removed by blunt dissection, keeping close to the capsule. Isthmus ligated, After ligating several small bleeders the muscles are approximated by eatgut sutures. Superficial horsehair with small tubular drain for twenty-four hours at the inferior angle of the wound.

While the dressings were being applied a brisk hemorrhage occurred, distending the flaps and necessitating reopening of the wound. The ligature on the inferior thyroid was found partially displaced. The ressel was re-ligated and the wound closed.

2. REMOVAL OF LIPOMA.—The patient has also a lipoma. It is located in the inframammary region. It is as large as a man's fist, but oblong in shape. When a fatty tumor is situated under thick skin, as in the back of the neck, it has no capsule and requires a dissection for its removal. But when it develops under the thin, movable skin of other regions there is a well-defined capsule and enucleation is very simple and quickly done. Seize the tumor with the thumb and fingers of the left hand, squeeze and press down hard. Then with one stroke of the knife cut through the skin and eapsule. The tumor pops up through the incision and is now grasped and pulled out entire with one movement of the hand. Two or three catgut ligatures and a continuous horsehair suture in the skin complete the operation.

Subsequent History.—On recovering from the anesthetic the patient was able to talk normally; no hoarseness. The following day there was almost complete aphonia, which continued forty-eight hours, associated with considerable serous accumulation in the wound. On removal of the serum the voice improved and the patient made an uninterrupted recovery. Primary union.

In operations on the thyroid the question of anesthetics comes up. In cases of simple goiter there is no objection to a general anesthetic. provided there is no marked embarrassment of respiration from pressure of the tumor. Twenty-five years ago the removal of a goiter was a very bloody operation, but now, owing to the advance in methods of hemostasis, it can be done with scarcely any loss of blood. To-day we look back and view with satisfaction our present methods of asepsis as compared with those of former years, but we dwell too little on that other great improvement in technic; the control of hemorrhage. Surgical operating cases of twenty years ago contained ten or twelve knives of all shapes and sizes, and perhaps one or two forceps. Now we ask for one knife and twenty or thirty hemostats. In the slipping of the ligature in this case we have another good lesson in hemorrhage. When a hemorrhage occurs in an accessible wound, do not temporize, as we are sometimes taught, but open the wound at once, turn out the clots and find the bleeding vessels. A possible danger in the removal of a goiter is injury of the recurrent larvngeal nerve, which, after looping around the subclavian artery on the right side, ascends in the groove between the trachea and esophagus, in close relation to the inferior thyroid vessels, to supply all the intrinsic muscles of the larynx except the crico-thyroid. It has happened to me, as to others, to injure this nerve with resultant paralysis of one vocal cord. If the nerve on one side only is injured, the huskiness of the voice in time disappears, owing to the compensatory action of the opposite vocal cord. If, however, both nerves should be severed, immediate tracheotomy would probably be required. By careful blunt dissection, keeping close to the tumor, and by care in the placing of forceps and in the ligation of vessels, we avoid injury to the nerve.

The goiter was surrounded by a dense capsule, and on gross and microscopic examination proved to be of the typical colloid type.

In connection with this case the gross specimens and microscopic sections of two simple colloid goiters removed in the clinic two and three weeks before respectively were shown. The first was a bilateral goiter, weighing 1,080 gms.; the second unilateral, weighing 390 gms.

Case 5.—1. Inguinal hernia. 2. Exploratory examination of kidney.

W. K., aged 36, machinist. Family history negative.

Previous History.—Gonorrhea fifteen years ago. No stricture, No other illness. Drank to excess up to five years ago.

Examination.—The patient is a young man, well built and in good physical condition. Head, neck and chest negative. Liver palpable, descending 3 c.m. below costal arch on inspiration; edge firm; not tender. Kidneys not palpable. No tenderness in kidney regions. Bladder and urethra normal. The patient has a left inguinal hernia, which was first noticed four years ago after severe muscular effort. It has gradually increased in size, but has never reached the scrotum and is easily reduced. He has worn a truss, but wants to be relieved from its annoyance and asks for an operation for radical cure. The operation as such is practically free of danger and is almost uniformly successful. Hence it may be freely advised in all such cases.

Operation.—Incision through skin and superficial fascia parallel to and a little above Poupart's ligament from the spine of the pubis upward to a point one inch above the internal ring. The aponeurosis of the external oblique muscle, then the internal oblique and the transversalis, which here are fused together as one structure, finally the transversalis fascia are successively divided from the external ring upward, so as fully to expose the internal ring. These, from a surgical standpoint, are the only coverings of a hernia in the inguinal canal. The first, the aponeurotic, which extends down from the external ring and is called the intercolumnar faseia; the second becomes attenuated downward as the cremaster muscle, while the third is technically named the infundibuliform process of the transversalis fascia. Now the cord is fully exposed with the hernial sac. This is lifted out of its bed and easily freed throughout its whole length. The sac is found and stripped from its surrounding attachments and from the cord, well up to the internal ring. This separation is usually easy in the acquired type of sac, as this seems to be, whereas when we have the congenital type of sac the separation is often difficult and tedious because in that case the sac is a part of the cord, the unobliterated tunica vaginalis.

It is well to remember in this connection that, strictly speaking, there is no such thing as congenital hernia, though a hernia may appear very shortly after birth. The term should be understood as referring to the type of sac rather than to the time of life when the hernia occurs. The majority of inguinal hernias occurring under 30 years of age have the congenital type of sac. They are nearly always scrotal and become so rather suddenly, whereas the acquired type of sac develops slowly and is

often "ineomplete." Now there are three factors to be dealt with in operating for hernia. The first is a narrow-pointed process of omentum. nearly always found in the sac, often adherent to its walls. If for no other reason the sae should be opened to look for this process, and, after finding it, it should be ligated earefully and the stump returned to the abdomen. In this instance it is adherent to the whole length of the sac and is dealt with accordingly. The next factor is the sac itself. This is transfixed and tied as high as possible and the stump pushed up within the abdominal wall. This method is now almost universally followed by surgeons. It was first practiced by Czerny and marked a great step in advance. The third factor is the closure of the abdominal wall. which includes the management of the eord. In this most surgeons adopt the Bassini principle or some modification of it, the essence of which is transplanting the cord to a more anterior plane. I usually follow Halstead's modification, placing the cord outside of or upon the aponeurosis of the external oblique. It is certainly not often necessary, however, to exsect the veins of the cord, as Halstead advocates, and few, if any, now use his buried silver wire sutures because of their proneness to cause trouble later. I am fond of using one unabsorbable suture just below the cord, because this is the point where a recurrence nearly always takes place when it does occur. For this purpose I use a small silver wire and am careful so to loop the end of it, after it is twisted, that it will not tease the tissues. This probably never gives rise to a sinus or aftertrouble. It serves no immediate purpose, but when the patient gets up and is subject to sudden strains in his work or otherwise it helps to support the scar tissue which unites the parts about the exit of the eord. Another point requiring special attention is that opposite the external ring, for this is where a recurrence of the hernia occasionally takes place. This point is protected by one or two extra eatgut sutures passed through the external pillar or the lower end of Poupart's ligament and across to the lower end of the sheath of the reetus muscle.

2. Exploratory on Kidney.—This same patient has another trouble from which he seeks relief. For the past two years he has had paroxysmal attacks of pain at intervals of two or three months, lasting from one to ten hours, in the region of the left kidney, radiating to the groin, often requiring morphin for relief. The pain sometimes ceases suddenly and sometimes gradually. Urine is scant during the attacks, followed by polyuria after cessation of pain. Blood was first noticed in the urine five days ago, at which time microscopic blood was present, and later several small clots were observed. No pus has been discovered at any time. His physician has made a diagnosis of renal stone. The x-ray gives no shadow that positively indicates the presence of a stone, but the history and symptoms all point in that direction and they are not explainable on any other theory. He is, therefore, entitled to an exploration of the kidney.

Operation.—Incision 15 cm. long in left lumbar region parallel with the twelfth rib. Kidney isolated. Some pathologic adhesions. Palpation reveals no irregularity on the upper or under surface. Bimanual examination of the pelvis of the kidney, no result. Pelvis incised. Cavity is abnormally enlarged. A thorough search reveals no stone. It will be wise to drain, and for this purpose a medium-sized rubber tube is used, placed in the pelvis of the kidney, providing for the possible escape of an undetected stone. A large or medium stone could hardly escape detection by such an examination as has been made, but

a small one might elude our search. I confess to some disappointment in not

finding a stone.

Subsequent History.—No calculus found in the dressings or by irrigation. Drainage removed after three days. Wound closed completely in four days more and patient made a rapid recovery. During convalescence it was learned from the patient, on close inquiry, that a few days before the operation he thought he might have passed a stone while urinating. He had a sudden sharp pain in the meatus and heard something drop in the urinal, but saw nothing.

CASE 6.—Recurrent ischio-rectal abscess.

E., aged 17, male, white; family and previous history negative. Present trouble began three months ago as small, tender swelling near anus, which grew rapidly larger. Was treated by local applications of heat. Abscess ruptured spontaneously with relief of symptoms. A small discharging sinus persisted. One week ago swelling reappeared and has become rapidly larger and painful. Examination shows a reddened indurated swelling about 4 cm. in diameter posteriorly and to left of anus. On pressure, pus escapes from sinus over swelling and from anus. Prostate normal. Urine negative.

Operation.—Nitrous oxid anesthesia. Grooved director inserted through sinus into abscess, thence into rectum. Incision with probe pointed bistoury along director into bowel. Pus evacuated and wound packed with gauze.

Nearly all such abscesses are tubercular in the beginning, as I presume this to be. Other bacteria, however, quickly invade the lesion, and we have all kinds of mixed infection. Success in treatment depends on preventing union of the walls of the sinus or abscess and compelling cicatrization of all the deeper parts first, from within outward.

CASE 7.-Infected bunion.

This patient has had a bunion on the metatarso-phalangeal joint of the right great toe for years. Three days ago the skin surface became infected, following chafing by the shoe. The swelling, redness and pain have gradually increased until the patient can no longer walk. Examination shows the joint and great toe considerably swollen, red, very tender. Over the bunion is a lighter-colored fluctuating area. On incision thin yellow pus escapes. We here deal only with the infection. The radical treatment will be carried out after the acute infection has disappeared. This consists in chiseling away the enlargement of the metatarsal bone which projects as an exostosis and is the real cause of the bunion and the source of great suffering and disability, even when no infection is present. Subsequent microscopic examination and cultures showed staphylococcus aureus to be the type of infection.

SOME SPECIAL PHASES OF EAR CASES.*

James Branch Taylor, M.D. Bloomington.

To make my subject clear, I will say that I might better have entitled my paper "Some Special Features of Ear Cases." And yet my mind was dwelling on this: that medicine assumes certain special phases in ear practice, that in ear cases professional experience and material come up in a certain special way, which is worthy of being set off and discussed and emphasized. Hence, I do not mean some special group or class of ear cases, but those medical peculiarities and earmarks which belong to the aural field. There are some special features here which need to be

^{*} Read at the meeting of the Brainard District Medical Society.

clearly apprehended, and need to be specially adjusted, by both the medical and the lay mind.

In the first place, the aural field needs to be given much greater prominence and importance than it has occupied or now occupies. I do both eye and ear work; in fact, two-thirds of my work is eye work; but, in sober medical judgment, I protest against the relative insignificance which both the laity and the profession assign to the aural field. It is a fad to be an eye man; the world is full of those who are trying just here to reach up to a field of special dignity and art; but somehow the aural field is rated as being ordinary and plebcian and devoid of certain higher and mysterious skill in comparison. This is medically all wrong, and the profession needs to be set right, as well as the laity. The need of this reform of opinion does not rest simply on the logic of the ease; that is, on the relative importance of the organ involved. It is not simply an error in physiologic rating, but involves a most serious error in prophylaxis and in application. It is not merely a fault in theoretic estimate, but a damage in actual practice. It is quite worth while to look into how this has come about. To appreciate the psychology of it is instructive, in order to warn both ourselves and others. If we see the natural pitfall, we can better avoid it.

- 1. The process of deterioration in the ear is often slow. Much more frequently than in eye cases there is a gradual fading away of function. The enemy saps and mines rather than takes by assault. The changes in tissue which end in change of function are of the on-creeping variety. The patient slides into abnormality so gradually that attention is not sharply arrested and consciousness is dulled. He does not feel that he is going till he has gone.
- 2. The process stalks on to its bad results with relative freedom from pain; in many cases with no pain; in very many cases where uncomfortable it is rather discomfort than pain. Even if there be pain, these are episodes, and long periods of "let up" between, during which times, however, most insidious and damaging work is going on. This freedom from pain, or the only occasional presence of pain, masks the seriousness of the situation. It also makes the seriousness of the situation. Unwarned, unarmed; unsuspecting, eaptured by the enemy. The medical reflection is this: that that which dies in silence is just as important as that which dies with an outery.
- 3. The damage of one ear does not sympathetically affect the other ear, as the affection or weakness of one eye affects the other eye. There is not only less outcry from the organ, but less outcry from its associates, less advertisement by itself, and less advertisement by its neighbors. Little wonder that it may go on to serious conditions unobserved; that is, to the unskilled mind. But here is the place for science. Here is the place for information to hang its lantern. Here is the place for the eye which sees deeper than ordinary observation. Here is where experience must check up ordinary appearances.
- 4. The reserves of hearing are less in evidence, less in constant use, than the reserves of seeing. Hence, the loss of them is less obtrusive and

less observed than the loss of the reserves of sight. I mean that, owing to the nature of the ease, the eve is constantly drawing on its limits in both directions, is constantly using both its far and its near powers. The reserves of the ear are more truly reserved for special occasions and special application. The ear runs more constantly on its middle and its near range, and hence the Trojan horse may come in almost unawares. We miss its special powers less; but the sadness of the case is that not only are they like the Texan's bowie knife, we need them when we do nced them, but their silent surrender means the enemy across the borders: and we come to realize that it were far better had we not had those days of blissful ignorance of the invasion. Added to silence as to pain, this unconseiousness of loss of extreme function, this silence as to gradual loss of power, makes a peculiar phase and a peculiar danger of the aural field. For the purposes of arrest and the purposes of healing, it were far better that the red flag were up. It is our duty and our function as men of seience to put it up,

5. Ear troubles are invisible, they do not affect the presentability or the appearance, are not subject to comment and notice, are not such a matter of pride and "keeping up." You see your neighbor's red eye. He knows that he is not looking well with it, and that his trouble is in the open. Your neighbor's ear trouble, inflammation or shortage in hearing, if he can get along functionally, is his own secret. Publicity does not incidentally make it important in his mind or in yours.

To sum up, we find that gradual approach, relative lack of pain in the processes, relative lack of sympathetic advertisement by its associate or its neighbors, lack of such advertisement and consciousness of incipient loss of power as eomes in eye cases, and lack of publicity which arouses pride and enforces attention, explain the peculiar attitude and the neglectful habit of the public mind, and no less of the average physician, in aural matters. They put us on our guard and they give us a warning. Such a study seems to me to enable us better to understand the ear field both as a matter of interpretation and as a matter of practice. The conclusions are evident; but we will give them later.

Meantime let us re-enforce the significance of our line of thought by bringing to mind the direfulness of the results which may come through neglect of keeping up the bars and fencing out the enemy. The ear field is full of apparent contradictions. One of these is that, though the lesser ear troubles do not rank in discomfort or in inconvenience with eve affections, final effects are entirely out of proportion to this incipient stage. For social reasons and the ostracism which it brings, loss of hearing is one of the most markedly depressing of ailments. The totally deaf man is a sadder man than the totally blind man. The condition may hamper him less for business, but it nevertheless depresses him more as a member of society. While one may be anticipating nothing, or may be feeling only a moderate ealamity, he may be, and often is, drifting to a most lamentable final outcome—one of the saddest misfortunes of life. The consequences to be avoided are of such weight and importance that they call loudly for the greatest watchfulness on our part, and the greatest assiduity in our eare of the public.

The other side of the case is this: What is the use of watching? What of the therapeutics in the matter? What can we hope for? All that we have said and have been developing amounts to naught, if there be no outcome. What is the reward of our care? We must be able to answer this in some encouraging way, in order to validate all these preparatory considerations. It is a pleasure to say to you that the aural field ranks with any other field in relievability, provided it be taken with all its peculiarities, and these be fairly allowed for and met in the scheme of treatment. There are special medical phases here, and they must be figured well into a scheme which would meet them. If I look back over my records, they are plainly declarative of two things: first, the response of average ear cases to right and fully-equipped means of handling, and, second, the necessity throughout of bearing in mind and covering the special needs and liabilities of such lines of practice. The latter being cared for, ear treatment and ear results may claim for themselves an excellent standing. It must be judicious and complete and persevering; but the returns in a wide range of cases are such as to gladden the heart of the ambitious and conscientious practitioner and to make another life for the patient.

Passing over acute cases and surgical cases which are not so much in question, I take three cases from my notebook merely as illustrative types, these cases exemplifying semi-chronic deafness, concerning the treatment of which there is the most skepticism.

Case 1.—Minnie P., aged 20, assigned to me October 12. In time which has elapsed since the 12th, hearing has been increased as follows: Right ear, watch from ½ to 1½, "A" tuning fork from ½ to 2½ inches, low whisper from 8 to 12 inches. Left ear, watch from 1 to 3 inches, tuning fork from 2 to 4½ inches, whisper from 12 to 18 inches. Here is a steady advance of 50 per cent. or more on original conditions within two weeks, which would certainly do credit to the handling of a subchronic case in any other field. In a couple of months I anticipate having the whisper distance as many feet as it is now inches; and, if the patient perseveres, she may have permanent good hearing. This is what I may call a typical prospective case of average possibilities. Of course, there are less curable cases and incurable cases; but the average case of thickened and dulled drumhead, of congested tubes and of bad hearing may have such an outlook as this, provided it be handled throughout in a timely and a thorough way.

Case 2.—J. S., aged 32. Hearing advanced by treatment between June 6 to 22 and October 4 as follows: Right ear (a bad and practically abandoned ear), watch from contact to 4 inches, fork from 1 to 6 inches, vocal tones in same proportion. Left ear, watch from 3 to 18 inches, fork from 3 to 13 inches. A year since cessation of treatment, which was, however, fairly prolonged, the patient, evidently from conversational tests, preserves these improvements in a substantial degree, if not entirely. This is a good type of accomplishment under average fair conditions of the patient (though with one decidedly bad car for hearing power) and under judicious and well-applied attentions. The patient worked for success—and got it.

Case 3.—Raymond P., a boy of 9. Perception for watch extended in a summer's treatment from 1 and 3 inches, respectively, to normal in both ears; other tests in proportion. The following winter the worse car failed quite a little, but was brought back to normal by short attentions the following summer. He may need attention following exposures of several winters, but the outlook is for confirmed sound hearing in the end.

Each of these cases was treated with superheated air, internal vaporizing and massage, and the vibrator as a means of external massage. It is useful to note, in passing, that youth is a most helpful contributory factor for good results. It is entirely unnecessary to ply you with tabulated figures, or to say more than that these are typical results of what may be accomplished.

I wish time to emphasize these points: 1. The patient must be guarded against the eareless optimism which is prone to attend ear cases, for the reasons which we have cited. He must be cautioned in the outset against saying, "I am well enough," or "This will do," or "I believe I do not need any more treatment." He must not be allowed to think he is cured and that it will be an indifferent matter whether he now "lets it go," until all the latent trouble which is remediable be put to rights. There is a special liability that ear cases will be turned loose prematurely. This point needs to be specially emphasized, even in the face of the danger that you may be suspected of great affection for the case for filthy lucre's sake. The time to adjust these questions with advantage and dignity is in your first interview with your patient. Go intelligently over the ground with him. It is far better to lose him than to have him hawking about the country the personal declaration that for any permanent results you are "no good."

- 2. Go earefully into the habits of your patient, both positive and negative. It is not a matter of indifference whether your patient wears rubbers or leaves them behind the front door even in slushy weather, because "they are so clumsy"; whether dress is changed from thick to thin and thin to thick under the whims of convenience or that autocratic czarina, Fashion; whether the skin be kept active and resistent by the morning cool bath, followed by friction (this double process is almost a keystone in building an arch against the liabilities to cold-catching); whether a man buries himself in a nicotine atmosphere and expects a healthy mucous membrane; whether a man or woman preserves a good stomach, the condition of which has a potential influence over the tone of the respiratory mucous membrane through contiguity and sympathy; in short, all the systemic things which the wise physician knows, but so many fail to rigorously follow out, and suffer in results, owing to the neglect.
- 3. The deeper lines of constitutional trend, whether there be any weakening dyserasia which may pull your fences down as fast as you build them up—these must be weighed in the balance as a complication for good or for evil. If there is something needing to be rectified, build up your background, if possible, so that the stars in their courses may

fight for your success. You will often need as co-workers all the stars on which you can get your hands.

4. Back up your office manipulations with some systematic and frequently-used local home attentions. Pardon the extract from the pugilistic arena. In fighting your pathologic adversary, you must get him "going" and "keep him going." Professionally stated, treatment must not be too intermittent if you will hold effects. Hence, as the result of experience, as well as of thinking, the writer is fond of such things as judicious packs to the throat, a most useful adjunct to ear treatment when there is the usual faucial congestion. Give your patients something which they can do easily and frequently, and, if possible, with a

prolonged and, hence, doubly effective application.

To the practitioner, independent of his relation to his patient, for the medical man has broader relations, as a citizen, in which he makes public opinion and helps mold general and public practices, there are these suggestions as to duty and wise personal influence: Medical mcn generally, recognizing the insidious and often obscure nature of ear troubles, should favor the same degree of tests, among school children, for deafness as for abnormal sight, and should exercise the same general pressure to have these rectified. Such a plan will be in the interests of the children in detecting many incipient cases which might not otherwise come to light. The general practitioner should be very watchful lest those under his care with acute car affections drift on the silent current to chronic damage for lack of the more elaborate and delicate modes of treatment with which the general practitioner is not equipped. profession is charged with various sins of commission. This is a sin of omission of which the profession must be careful to keep its skirts clean. The most important feature of this paper is to call attention to the facts which make this neglect easy and liable. The conditions creating an atmosphere for aural troubles, being such as to east a hiding mask over lurking and, hence, insidiously threatening dangers, make this field somewhat unique. These reasons seem to us to deserve a special emphasis, a special setting forth, and a special remembrance.

ULCER OF THE STOMACH.*

W. E. GUTHRIE. M.D. BLOOMINGTON.

Ulcer of the stomach is an insidious disease whose presence is frequently unsuspected at a time when a severe hemorrhage or a perforation is imminent. Many cases have the distinctive symptoms of localized tenderness, pain after the ingestion of food and emesis of blood so markedly prominent that even the most careless or inexperienced have the diagnosis thrust on them. But, unhappily for us, this is not generally the case. We should suspect and look for the characteristic symptoms of ulcer in every case of persistent painful indigestion.

What causes an ulcer of the stomach is a question not answered to

^{*} Read at the meeting of the Brainard District Medical Society.

the satisfaction of all. A foreign body may tear a hole in the gastric mucous membrane which promptly heals, and hydrochlorie acid may be present in such strength as to corrode the throat and lips when vomited, without damage to the stomach. Virchow thought a hemorrhagic infarct in the stomach wall responsible for the disease. It is safe to say that, whatever may be the exciting cause, the ultimate origin of the disease is a lowered vitality which lessens the resistance of the stomach wall and allows the acid to corrode a solution of continuity of the mucous membrane made by a foreign body, or in any disease of its blood vessels favoring a hemorrhagic infarct. A clot forms in a vessel of the mucous membrane or the latter is torn or cut. and Nature immediately begins an effort toward repair. The bacteria of the stomach and its strong acids are active in opposition. Which shall win depends on the vitality of the stomach and its possessor. Should vigor be deficient, an ulcer is the probable result. When food is taken into the stomach it gets into the ulcer, irritating its sorc nerves and causing pain, especially if the food be lumpy or hard. With the progress of the disease, a blood vessel may be opened and bleeding ensue. If this be plentiful, or vomited at once, the blood will be fresh and look bright rcd; if it be rctained in the stomach for a time and mixed well with the gastric secretion, it will be dark and lumpy, like old coffee grounds. When passed from the bowels, it is tarry in appearance.

The three most prominent symptoms of gastric ulcer are pain, hemorrhage and a circumscribed tender spot in the region of the stomach. The pain is distinctly digestive, coming on shortly after the taking of food. It is proportionate in degree to the solidity, or roughness, and the quantity of the food ingested, and, as a rule, disappears when the stomach has been emptied either by vomiting or in the normal way by propulsion into the intestine. The pain may be of any degree of severity. It is usually of a persistent burning or boring character, but may be violent or spasmodic. It is localized generally in the epigastrium, somewhat to the left of the median line, and may radiate to the spine. Rarely the pain is felt in the back, opposite the stomach, and not at all in front. The fact that it is not felt, or only very exceptionally felt when the stomach is empty and is absent or much less in degree when only liquid food has been taken, is almost diagnostic of gastric ulcer, though the pain of an excess of HCl is sometimes similar in its manifestation. The latter pain usually comes on later, not often until an hour or two after eating, and is apt to increase in severity until digestion is at its height; the taking of food, especially if highly nitrogenous, or large doscs of alkaline drugs relieves it, while the pain of ulcer generally follows immediately on the ingestion of food, and the more food the greater the pain. It becomes better as the food is liquefied by digestion or is passed from the stomach. But we must not forget that frequently ulcer and hyperchlorhydria exist together, and when they do the diagnosis is not easy until hemorrhage takes place.

Marked tenderness on pressure over a small circumscribed area in the epigastrium, as well as on the left side of the spine, over the origin of

one of the last two or three ribs, is a very constant sign of ulcer, probably the most constant of all its signs and symptoms. The painful spot in front is, in most cases, very marked or acute and is situated either just below the ensiform cartilage nearly in the median line or a little to the left of it. But it may exceptionally be felt in any part of the surface overlying the stomach and the latter may be seriously misplaced.

Vomiting after taking food is a rather frequent symptom of gastric ulcer, though it is seen in so many other diseases that it is less diagnostic than the three other cardinal symptoms I have described. The vomiting of ulcer often occurs one or two hours after eating when digestion is approaching its height and is not, as a rule, accompanied by much straining. Its occurrence is followed by a cessation of pain. This is in contrast with the vomiting of cancer, which is likely to be difficult and followed by little or no relief from pain. In ulcer, the vomited matter is most frequently partly digested food containing a normal percentage or an excess of free HCl. This distinguishes it from cancer, in which HCl is deficient.

There are seven general courses which an ulcer of the stomach may pursue:

- 1. It may heal and leave nothing but an inoffensive cicatrix.
- 2. It may heal and produce a cicatrix more or less deforming and disabling in character. If at the cardiac orifice, it interferes with the ingestion of food and induces starvation. As an ulcer is rarely found in this location, this complication is rare. If at the pyloric orifice the ejection of food into the intestine is retarded and finally prevented, the stomach is dilated, vomiting is frequent and starvation the sequel; this is a rather frequent complication. If in the lesser curvature, the cicatricial contraction draws the pylorus upward, shortening the lesser curvature and interfering with the proper emptying of the stomach. Fermentation of food, dilatation of the stomach and the formation of fresh ulcers are common results of this course. If in the anterior or posterior wall, and more especially if in the greater curvature, the cicatricial contraction may cause an hour-glass shape of the stomach and interfere with the proper movement of food toward the pylorus, thus inducing fermentation of food and its natural sequelæ.
- 3. The progress of the ulcerative process may cause the erosion of a small vessel and result in intermittent hemorrhages of minor degree, gradually producing anemia, making the patient easy prey for many complicating diseases, or a large vessel may be opened and rapidly prove fatal.
- 4. The perforative process may miss any vessel and, extending only through the mucous and muscular coats, cause an adhesive inflammation of its peritoneum, fastening it to adjoining organs. Then ensue all the digestive disturbances and neuroses incident to adhesions along the alimentary tract.
- 5. The perforative process may not only miss blood vessels, but it may take place in a location where, on account of constant movement of

contiguous organs, adhesive inflammation is not possible, and the stomach contents escape into the general peritoneal cavity, general peritonitis is set up and death speedily follows.

6. Perforation may take place into the lesser peritoneal cavity. An abscess then forms which may rupture into the lungs or any of the adjoining organs, or very rarely find its way to the surface of the body.

7. Cancer may form in the ulcer and not only mask the diagnosis, but change the entire course of the disease. According to Boas, 5 or 6 per cent. of all cases of ulcer meet with this complication. This certainly seems an unduly high estimate.

When a perforation has taken place, how shall we know it has occurred? On the early detection of its presence will depend the institution of the only measures which lend any chance of recovery. This occurrence is attended by the general symptoms of abdominal shock or peritonism, as it has been aptly called, prominent among which is an acute, sharp, lancinating pain in the upper part of the abdomen, frequently confined to the epigastrium and radiating through to the back. Its location is the same as the pain of the pre-existing ulcer, but its character is much more profound. Both patient and physician realize that some change out of the ordinary has occurred. Shock, usually profound, rapidly follows. The pulse becomes rapid and feeble, the skin is covered by a cold sweat, respiration is hurried, and it is noticed that the diaphragm is protected from motion as much as possible, the countenance wears an anxious expression, and the temperature is normal or below. As a rule, the patient vomits once or twice, but it is more the vomiting of shock and not of stomach irritation and is rarely continuous. vomited matter rarely contains blood. Robson says it is absent in 80 per cent. of cases. Of all signs, the rigid and retracted condition of the abdominal muscles is the most diagnostic. Deaver thinks this alone sufficient to warrant a diagnosis and a consequent laparotomy. Special localized tenderness in the gastric region will fasten the conclusion. In a few hours the immediate symptoms which I have described give place to others. Slowly reaction takes place, the pulse becomes stronger but remains fast, the temperature generally rises, the acute pain subsides, but soreness and tenderness remain. Rigidity is displaced by progressively increasing tympany, and there is a nearly uniform percussion note over the entire abdomen. General peritonitis now supervenes, the temperature generally continues to rise, although in exceptional cases in which the sympathetic nervous system has lost its normal reactionary irritability it may remain low, the pulse grows faster and weaker, the patient lies on his back with the legs drawn up, the countenance becomes of a dusky hue, vomiting begins again, the bowels are constipated and resist all effort to move them. Life's chapter soon closes.

Having determined the presence of an ulcer and realizing the untoward course it is likely to take, an answer to the question, "What are we going to do for it and its possessor"? becomes urgent. Improved methods of treatment have done much for the relief from this disease. The prognosis will depend on the absence of serious complications, the youth

and vigor of the patient and, above all else, his willingness to submit to a methodical course of treatment in bed. When the proper treatment, of which rest in bed is an important factor, is commenced early and strictly carried out, recovery nearly always takes place and is likely to be permaneut. When the affection has long continued and the ulcer is deep, as shown by frequent and severe hemorrhages, the outlook is less favorable. When it is complicated by gastritis the disease is likely to be very obstinate, and when stenosis has occurred or the emptying of the stomach has been seriously interfered with surgery offers the only hope of relief. If by reason of hyperaeidity of the stomach, accompanied by anemia or reduced bodily vigor, we have reason to fear the production of an ulcer and are reasonably sure that one has not already formed, we should advise moderate exercise in the open air, massage of the extremities, proteid foods in a liquid or pulpified state and iron, in the hope of preventing ulceration. But in using iron, under no circumstances use the tincture of the chlorid of iron; the HCl used in its preparation is positively harmful in this condition. The carbonate is the best form of iron for this purpose. Should the presence of uleer be well established, and especially should hematemesis have occurred, the rest or bed treatment becomes imperative.

There are two fundamental indications in treatment: To put the stomach at complete rest, and to reduce the hyperchlorhydria, or excessive acidity of the gastric secretion. To aid in this we must quiet pain, allay vomiting, prevent dilatation of the stomach and arrest hematemesis. The diet, with confinement to bed, must be depended on mainly for the fulfillment of these indications. To do this we must keep the patient in bed for three weeks at the least and possibly for twice as long. For one week feed exclusively by the rectum. In order to heal any organ, it must be put at rest. This is particularly true of the stomach, for quietude is necessary not only to give Nature's forces a chance to repair, but to lessen the secretion of the highly irritating hydrochloric acid of the gastric juice. A painful wound heals tardily, so measures must be taken to relieve the suffering incident to the ulcer. This is best accomplished, not by anodynes, but by hot wet packs over the epigastrium. If these packs be of wool, covered by oiled silk or other substance impervious to moisture, they will not need to be changed so frequently, especially if over them be laid a rubber bottle of hot water, not so full as to oppress the patient by its weight. Nutrient enemas should be introduced every four hours and should eonsist of one ounce of egg albumin, panopepton, liquid peptonoids, somatose, milk, malted milk or thoroughly cooked starch in three ounces of normal salt solution. This will practically all be absorbed. Some one has said that where the organism is urgently in need of food and an enema is given, reversed peristalsis takes place in the intestine and the food is carried upward. One of my own cases was fed per rectum for more than two weeks without serious loss of weight. Some residue may not be absorbed, but may ferment and irritate the rectum. To obviate this a cleansing enema of sixteen or

more onnees of normal salt solution should be administered once in every 24 hours.

Generally by the end of the first week feeding by the mouth may be cautiously resumed. Equal parts of milk and limewater is the food advised by most authors at this period. A half a tumblerful may be given every hour for two days, but the patient, if asleep, should not be wakened. Now a solution of egg albumin is well borne and cau be given freely. This has to be made with eare to be effective. Beat thoroughly the whites of four eggs, set them aside in a cool place for an hour and then skim off all remaining froth; of this give a teaspoonful in an ounce of water every half-hour if required. Generally this is all that should be given for the first two weeks, the nutrient enemata having been continued meanwhile. After that, if the case has progressed favorably, any kind of gruel, well strained to remove lumps, may be given in quantities of 8 ounces or less at a time. This may be salted to suit the taste, but never peppered. Some of these may not be well borne by the patient under treatment; when this is true the offensive food must be stopped immediately and, if necessary, return be made for a time to the exclusively rectal feeding. At the end of three weeks stale bread with butter, baked potato, thoroughly masticated, baked custard, bland jellies and other simple articles of food may be given. But the patient will be safer without meat, unless scraped or finely cut, for months after his apparent recovery, and should avoid still more stringently, for a vet longer period, all alcoholic beverages, spices or sauces rich in spices, the sharper acids as vinegar and very acid fruits, the coarser vegetables, all fried foods, pickles and all the coarser grains. Dry toast, bread crust, zweiback and similar articles are mechanically irritating and do much harm, if not thoroughly softened before swallowing.

If during treatment there be constipation, a saline laxative may be given daily if necessary. It rarely disagrees unless given with much water. Under no ordinary circumstances should a stimulating eathartic be given. If vomiting be persistent and pain severe, they are often relieved by drop doses of dilute hydrocyanic acid given, without further dilution, each hour. Sometimes the pain is kept up by the persistent overacidity of the stomach. This condition is especially amenable to the bismuth treatment. To be most effective 2 drams of subnitrate of bismuth is given suspended in four ounces of water once daily. It is usually surprising how soon there is relief from vomiting and pain after the patient is in bed and the stomach put at rest. This treatment will permanently cure the large majority of patients if commenced early and persevered in long enough. Unfortunately, too often, these cases do not come under our care, or are not diagnosed by us, early enough to win this easy relief, and surgery must help us if we hope to save our patients.

There are those who say that any case with hematemesis or melena should be operated on. That is probably an extreme assertion. But I do believe that in such cases a surgeon should be associated in the man-

agement of the case, ready to operate should it become urgent. A chronic ulcer with intractable, though moderate symptoms reduces the patient to a state of invalidism. Medical measures should not be persisted in until the patient is reduced through suffering and starvation. Under favorable conditions the operative mortality is less than 10 per cent. In William Mayo's hands it has been less than 5 per cent. special surgical procedure is generally gastroenterostomy. If this is carefully and intelligently done the stomach drainage is complete and the ulcer promptly heals. In rare cases the ulcer must be excised and the wound closed. The incision is made in the median line or a little to the right, extending from one inch below the ensiform cartilage downward so far as necessary. Into and through this opening the stomach is readily drawn and inspected. If the ulcer is not of such a character as to require excision, the colon and omentum arc drawn up through the wound in such a way as to put the mesentery of the transverse colon on the stretch. At this time, almost invariably, the jejunum appears in the field and should be drawn out on the abdomen and turned downward. An incision in the direction of the mesenteric vessels is now made through the colonic mesentery until it exposes the posterior wall of the stomach. Through this opening the stomach is drawn and its most dependent portion found. The union with the loop of the jejunum may now be made with the Murphy button, the McGraw ligature or sutured after the manner of William Mayo. I have used the button and the Mayo suture and much prefer the latter. It requires a little more time for its execution, but, if well done, is much more certainly successful. There have been a good many cases reported in which the button has slipped back into the stomach and required an operation for its removal. Some operators make an additional union between the two arms of the jejunum to prevent what is called "vicious circle." It has been found that in many cases the bile and intestinal juices which accumulate in the duodenum and the beginning of the jejunum flow into the stomach through the new opening, instead of pursuing a desirable course downward along the intestine, and to obviate this another opening is made connecting the intestine above and below its union with the stomach. William Mayo has probably had a larger experience in this operation than any one else and he does not find it necessary to make the union of the intestinal arms. He says the essential point is the opening of the stomach at its most dependent portion.

If we accept Greenough and Joslin's figures that only 40 per cent. remain well five years after medicinal treatment for ulcer and that 5 per cent. die in spite of treatment, and accept Mayo's experience in operative treatment, we must agree that there is here a field for good surgical work. I venture the assertion that, ten years hence, gastric and duodenal ulcer, accompanied by hemorrhage, will be considered as truly surgical diseases as appendicitis is now.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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JANUARY, 1906.

CHANGES IN THE JOURNAL.

THE ILLINOIS MEDICAL JOURNAL with this issue begins its eighth volume. Several changes in its style will be noticed. The printing will be done hereafter by the American Medical Association Press, where only medical writings are put into type, and where all facilities for special work of this kind are to be had. Those responsible for THE JOURNAL have long wished to have the work undertaken by this office, but circumstances seemed to prevent an earlier transfer. The double column has been abandoned and the single substituted. For many reasons this is a great advantage. Especially in the matter of reprints, the single broad column is to be preferred, because separate articles can be issued without resetting the type, as seemed, for good appearance, to be necessary with the single narrow column. The map of Illinois has been taken from the cover, as it seems to have outlived its usefulness, and a change in the color of the cover will be noted. A better quality of paper is used. Several questionable advertisements have been dropped. In their place

will be found advertisements of a strictly ethical character. Should any of our readers know of any facts derogatory to any firm or institution advertising in The Journal, they will confer a favor by communicating with the proper officers. The day for unclean advertising pages has gone, and no journal, more especially no journal representing a state society, can afford to support questionable firms, institutions or preparations. At the same time it should be remembered that the officers of the society can learn of dishonest advertisers only by information given by those readers who have personal knowledge of these lapses. Undoubtedly, the great work of the profession for the coming year will be to perfect its organization.

COUNTY SOCIETIES AND THE STATE SOCIETY.

In the process of reorganization which has taken place in the state in the last four years, in conformity to the uniform plan adopted by practically all the state societies, a number of changes occurred which are worthy of mention, explanation and emphasis. No one of these is of more importance than the change in the relations between the county societies and the Illinois State Medical Society. Prior to the adoption of the new constitution in 1903, each county society was an entirely independent body, while the Illinois State Medical Society was a separate organization, to which a member of any county society could belong or not, just as he chose. It had its dues, entirely separate and distinct from those of county societies. Its members might belong to the local societies of the county in which they lived, or not, as they saw fit. But with the adoption of the new constitution, the old State Medical Society, as a separate body, practically went out of existence. Each county society, as soon as it received its charter from the state society, became the sole recognized fraction of the state organization for that county. It alone had the right of electing members or declining to accept applications for membership. In the language of the constitution, the county society is the only door through which entrance can be gained to the state society or the American Medical Association. The county society alone has the right to levy and collect dues from individual members. Each county unit, through its duly elected delegates, is represented and has a voice in the State House of Delegates. No one ean be elected to membership in the state society. He must apply for and be elected to membership in a constituent county society. As soon as he becomes a member of his local society, he is, ipso facto, a member of the state society. Membership in a constituent county society, therefore, includes and carries with it, necessarily, membership in the state society. There is, consequently, no state medical society aside from the membership of the county societies. The state society is simply the aggregation of all the county societies. It is as impossible, under the terms of our present state constitution, for a physician to be a member of the state society and not a member of his county society, as it is for a man to be a citizen of Illinois without holding his citizenship in some county and township in the state. It is equally impossible for a physician to be a member in his county society and not be a member of the state society, since the state society is only the aggregated membership of all the county societies. A citizen might as reasonably take the attitude that he was a citizen of Morgan or Madison or Stark County, but was not a citizen of Illinois. There is no state society, apart from the county societies. There are only the House of Delegates and the state officers.

This general principle is plainly set forth in the state constitution, but deserves emphasis and reiteration on account of its bearing on many practical questions. Most important of these is the matter of dues. The county society alone has the power of fixing, levying and collecting dues from the individual members. The state organization has no dues, can levy no dues and has no power to collect dues. For the purpose of meeting the expenses of the state offices and for carrying on the work of organization throughout the state, the House of Delegates is empowered to levy each year, on the constituent societies, a per capita assessment. At the session at Rock Island last May, this assessment was fixed at \$1.50 for the current year. This assessment was levied not on the individual member, but on the county society. It is due to the state society from the county society, and should be paid by the secretary of each county society to the secretary of the state society. It should be paid on every member in good standing in every county society.

There is, then, no separate membership in the state society, to be held or not, as one may choose. There are no state society dues, to be paid or not, as one may wish. County society dues should be the amount needed for local purposes, plus the per capita assessment of the State House of Delegates. Since each county elects its quota of delegates, this is taxation by representation, and is thoroughly democratic in principle. Each assessment is for one year only. The House of Delegates that meets in Springfield may assess the members \$1.00 or \$2.00 for the coming year in accordance with the needs of the state organization. They may levy the same assessment as for the last two years.

County society dues, therefore, should be the amount of the state assessment, plus the amount needed for the work of the local organization. If a county society needs \$2.00 per member for its own work, its dues for the past year would be \$3.50. This entire amount is due the local society, \$2.00 to be retained by the secretary and \$1.50 to be forwarded by the county secretary to the state secretary. Nor is any physician truly in good standing who pays \$2.00 "for county dues" and refuses to pay \$1.50

"for state dues," unless, of course, his county society prefers to pay the state assessment on his account out of the treasury.

These principles, then, are clearly set forth in the constitution: county and state membership are one, there are no state society dues, there is a state per capita assessment, paid from the county society dues of cach member. A clear appreciation of these facts on the part of county secretarics and members will obviate any misunderstanding regarding either membership or dues.

THE AMERICAN MEDICAL DIRECTORY.

All members of the Illinois State Medical Society, as well as all other practicing physicians in the state, have doubtless received by this time literature and information blanks from the American Medical Association regarding the American Medical Directory, soon to be published. In common with other state society organs, The Journal desires to call the attention of its readers to this work, one of the most important as yet undertaken by the organized medical profession. Owing to lack of foresight or failure to appreciate the importance of such work, the registration of members of the medical profession and the recording of the legal evidence of the right of the individual physician to practice, have been in previous years, in many of our states, left to laymen or to the perfunctory labors of political appointees. In many states it is practically impossible to determine whether an individual physician is or is not legally entitled to practice medicine. As a result, the law regarding practice has become practically useless, as there is no way of ascertaining whether or not its provisions are being enforced. In Illinois it is a pleasure to observe that the records of our State Board of Health are in admirable condition, and have been regarded for years as a model by other state boards.

The movement on the part of the American Medical Association, in establishing a "general clearing house for information regarding the medical profession of the United States," is a thoroughly commendable one, and can not fail to be of great service to the profession throughout the country. The value and utility of an index of all physicians compiled from personal and official sources, are too evident to need elaboration. The decision of the Association to publish such information as can be utilized in the form of a Directory is highly commendable. All medical directories, hitherto published, with a few unimportant exceptions, have been published by laymen for purely commercial purposes. Apparently, the value of these directories has been the number, not the quality, of names contained therein. Dentists, druggists, horse doctors, osteopaths and mental healers have all been mixed in with physicians, higgledy-pig-

gledy, and the directory that contained the largest number of such choice names was the best. Any kind of company or enterprise, that could and would pay the price, or any fraction of the price, could gain access to the advertising pages. Any one who bought a book or paid a small bonus could enjoy the sensation of an extended write-up, with his name in capitals and a quarter of a column of ex-professorships trailing behind. And yet intelligent members of the medical profession have patronized such publications, because they were the only ones in the field.

The announcement that the American Medical Association is preparing a directory of legally qualified practitioners, with all information verified from official records, is of interest to all reputable practitioners in the state, and especially to all members of the Illinois State Medical Society. As the names of all members of the state organization will appear in capitals, the work, when completed, will be both a general directory and a state society Blue Book. It is hoped that every reader of The Journal will at once furnish the American Medical Association with the personal information desired, that all county secretaries will see to it that the state secretary is furnished with a complete and correct list of members of each local organization, and that officers and members of the state society will do all in their power to make the portion of the American Medical Directory for Illinois as accurate as it can possibly be made.

THE COUNCILOR'S BULLETIN.

THE JOURNAL desires to acknowledge the receipt of The Councilor's Bulletin, a bi-monthly publication, issued by the General Secretary of the American Medical Association. We also wish to extend a cordial welcome to this new visitor. It is sent to all county secretaries, state society officers, councilors, trustees and members of the National House of Delegates. Its object is the discussion and dissemination of ideas, experiences and views regarding medical organization, how it can best be accomplished and how utilized when completed. The Bulletin is established for the purpose of furnishing its readers, who are the organization officers of the various state associations, with a medium through which free discussion of methods and results can be carried on. The two numbers so far issued contain letters and articles from various members of the organized profession throughout the country, as well as numerous convenient tables for reference. Communications by members of the Illinois State Medical Society are noticed in several instances. It is to be hoped that the county secretaries and state officers of Illinois will avail themselves of this opportunity to come in touch with broader lines of organized effort throughout the country.

A PRACTICAL HINT FROM OHIO.

The Ohio State Medical Journal for November contains an able editorial on "The Assistance of County Societies in the Prosecution of Hlegal Practitioners." As Dr. Frank Winders, the Sccretary and editor of the State Association, has been for years the efficient Secretary of the State Board of Medical Examiners, this editorial possesses the advantage and interest of expert advice upon the subject. Another editorial in the same number upon the subject, "The Physician and the Legislature," is also worth reading. The closing paragraph is particularly noteworthy: "Recently the Governor of a State like Ohio appointed an undesirable physician to a desirable position. The Governor was written to, telegraphed and telephoned to by many physicians and urged to see that the appointment was a mistake. He saw it. He put the right kind of a man in the place. Then a few weeks later the Governor sent for some of his friends in the profession and spoke in words to this effect: 'When a project comes to the attention of a representative of the people requiring his action, he endeavors to inform himself concerning it. Those who have some selfish end to accomplish are usually forward with their arguments and are insistent, while, on the other hand, well-informed men in the community neglect the responsibility of presenting to their representatives such information in their possession which will lead to a proper conclusion of the project. Because of their neglect a mistake may be made, then these well-meaning citizens sit back on their haunches and damn the government."

NOTICE.

ILLINOIS STATE MEDICAL SOCIETY.

All members of the Society residing in Cook County will please send to Dr. S. C. Plummer, 34 Washington street, Chicago, the titles of papers which they wish to read before the Section on Surgery. Surgical Specialties and Obstetrics at the coming meeting at Springfield, Ill., May 15. 16 and 17, 1906. The editor of The Journal wishes to publish a preliminary program in April, and all copy must be in his hands by March 15. If possible send synopsis of paper with the title.

Members of the State Medical Society living outside of Cook County desiring to contribute papers for Section Two—Surgical Section—will please communicate with the chairman, Dr. R. J. Christie, Jr., as soon as possible.

It is desired that the titles and abstracts of all papers be in the hands of the chairman before April 1, as that is the time the program will be announced.

Respectfully,

R. J. Christie, Chairman Section Two, Quincy, Ill.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY MEDICAL SOCIETY.

The regular meeting of this society was held at Quincy, November 13, with President John A. Koch in the chair. Those present were Drs. Ashton, Brenner, Christie, Ericson, Grimes, Knox, Koch, Lierle, Montgomery, Nichols, H. G. Pfeiffer, Reticker, Rice, Robbins, Rosenthal, G. B. Shawgo, K. W. Shawgo, Wells, G. G. Williams and W. W. Williams. Drs. Kirk Shawgo and Harry E. Becker of Quincy and Chalmers R. Hecox of Golden were admitted to membership.

Dr. Joseph Robbins offered a resolution in regard to the correction of existing deficiencies in the Army Medical Department, and it was resolved therein that the passage of the "Bill to Increase the Efficiency of the Medical Department of the United States Army," as drawn by the surgeon-general, would make for that end. The resolution was adopted by the society, and it was ordered that copies be sent to the congressional representative from the district, Hon. George N. Prince, and also to Senator Cullom.

Dr. Rosenthal presented a paper on "Weather Influences in Pathologic Conditions." The various untoward effect of weather influence upon arthritic diseases, chronic nervous diseases, arteriosclerotic manifestations, valvular heart lesions and pulmonary tuberculosis were briefly considered.

Dr. Rice reported a death from pulmonary embolism following a compound fracture of the leg. The patient was a male, aged 40, whose previous health had been good. The convalescence from fracture had progressed favorably until the fifth week. On two or three occasions previous to his death there had been slight attacks of dyspnea with pain in the side and some temperature, which had been attributed to pleurisy. All these attacks were characterized by the abovementioned symptoms and increased vocal fremitus with moist râles. The final attack showed the cause to be obstruction by pulmonary embolism. The last seizure was characterized by great dyspnea, coma and death within twenty minutes. For a few days previous to his death the patient had been wearing a coat and walking about the hospital on crutches.

Dr. Montgomery reported a case of perineal protatectomy by Young's method, in which the operation was very successful. Scopolamine morphin was administered one hour previous to the operation; the anesthetic administered was ether, 27 drams being used. The patient rested well after the operation and suffered no pain or shock. Dr. Young's prostatic retractor was used and contributed largely to the ease of operation, the gland being brought down so that the various manipulations were made under the guidance of the eye rather than by the sense of touch, as in the old technic. The patient was 72 years old and the operative indication was impossibility of catheterization.

Dr. Ashton said that no one method of procedure should be employed in this operation. The hypertrophy may be confined to median or lateral lobe, or other complicating conditions may exist which must be reckoned with and which call for a varied technic. He referred to a case in his own practice where the prostatitis was complicated by a stone, which was the size of a walnut. This was caught with forceps and by means of this improvised retractor very efficient pressure was made on the prostatic tumor. In incising the superior portion of the sphincter to withdraw the stone he made a series of nicks with the scalpel rather than a sweeping incision, thus preserving the integrity of that muscle. Dr. Christie was of the opinion that approach to the prostate by the suprapubic route would eventually be the method of election. Dr. Rice condemned the practice of putting off the operation of prostatectomy until it becomes a last

rcsort. In most cases consent could be had from relatives and patient only when it was apparent that the sufferer was failing rapidly. To this he attributes the frequent mortality of the operation. Adjourned.

GEORGE E. ROSENTHAL, Secretary.

BRAINARD DISTRICT MEDICAL SOCIETY.

The Brainard District Medical Society held its 115th quarterly meeting in the convention room of the Illinois Hotel, Bloomington, McLean County, Thursday, Oct. 26, 1905. The meeting was called to order at 10 a.m., with President P. H. Oyler, of Mt. Pulaski, in the chair. The following applications were received and, on favorable report of the Board of Censors, were received into full membership:

A. B. Curry, J. H. Fenelon, E. Mammen, R. D. Fox, of Bloomington, McLean County; L. M. Perry, of Broadwell, and F. M. Hagans, of Lincoln, Logan County.

The Bloomington members of "Old Brainard" entertained all visiting members at dinner at the Illinois. The society voted the Bloomington members a vote of thanks for their hospitality. The following papers were read:

DIFFERENTIAL DIAGNOSIS IN ABDOMINAL DISEASES OF CHILDREN.

THOMAS W. BATH, M.D.

Member of Staff of Brokaw and St. Joseph Hospital, Late Captain and Asst.-Surgeon U. S. Volunteers.

BLOOMINGTON, ILL.

My reason for bringing this subject before you for discussion is because I am satisfied that certain abdominal diseases of children exist with greater frequency than practitioners are generally willing to admit. My paper will not take in the whole range of abdominal diseases, but will be limited to Intussusception, Appendicitis and Typhoid. This paper will be a plea for greater certainty in diagnosis, because, after all, brilliant operative work or fine spun therapeutic theories cause the surgeon or physician to fall into disrepute when the results are found to disagree with the diagnosis. Every layman has heard of appendectomies done where no appendicitis existed. Many have known of brilliant surgeons who have operated for fibroids and the fibroids cried out. Equally bad, out not so important in results, have been the errors of physicians whose phantom tumors have walked the earth as children, or whose "stomach troubles" have proved to be serious lesions of other viscera. So the honors appear about equally divided. The practitioner, be he surgeon or physician, at the bedside of the sick can arrive at an intelligent diagnosis only when he is thoroughly familiar with all the pathologic conditions with which the patient might be afflicted. His intelligence will instantly exclude from the field of probability such diseases as are foreign to sex, climate and social conditions. The probable condition, that is, the one which occurs most frequently, will first suggest itself to him, but before he can conclude his diagnosis, especially if it be fairly doubtful, he should consider the possible pathologies, such as actinomycosis in the abdomen of adults or gall-stones in infants or gastric carcinomas in children.

In the field of abdominal diseases of children the practitioner must have in his mind's eye a vivid outline of the normal anatomy of the abdomen and the diseases peculiar to each organ. He should familiarize himself with the complete list of the regional diseases and their symptomatology. In general they are easier to remember by classification than by a miscellaneous list of pathologic entities, which are easily forgotten. For instance, in the alimentary canal, beginning with the stomach, the common infection of children is gastritis, not due to teething, as many medicinal men still assert, but nearly always due to food infection. Gastritis produces, in ordinary sequence, pain, vomiting, indigestion,

fermentation, bloating, diarrhea, each in its turn and all together making a marked impression on the nervous system of the child. Lower down the tract, a strangulated hernia might develop with its symptoms of cutting and intense pain, followed by repose, to be succeeded by another attack of pain, with vomiting, possibly stercoraceous, constipation, collapse and death if not relieved. With this much as preliminary, let us consider these diseases which, as we have said, are not generally regarded as so common to children, yet which closer clinical diligence and broader observation teach us are fairly frequent. We will begin with intussusception. The close kinship this disease bears in many of its symptoms with dysentery may lead the practitioner, whose diagnostic acuity has not been sharpened by extensive experience, to pass it over until the time for favorable intervention is past. Though occurring in all ages, it is essentially a child's disease, more common in boys than in girls in the proportion of three to one. The beginning is always sudden. It frequently occurs during the sleep of infants. Predisposing causes are any which violently excite peristalsis, such as summer diarrheas of children. The direct cause has been said to be the greater relative length of the eolon and its mesenteric attachment in children than in adults. This undue length, together with the fact of an active ilcum joined to a passive colon, is also assigned as a mechanical cause of intussusception. Others claim the cause due to localized paralysis of some of the visceral ganglia, thus allowing the smaller gut to drop into the lumen of the larger. Boas, after a careful analysis of assigned causes, concludes there is no one definite causc. Three-fourths of all intussusception in children and about one-half of the cases in adults occur at the ileocecal valve. It frequently complicates the appendix and sometimes drags a portion of the mesentery in with the invaginated gut. In tussusception constitutes three-fourths of all the bowel obstructions of children. The prognosis differs. Robinson declares that recoveries are impossible, while others, as Douglass and Erdman, place the recoveries at about 20 per cent.

The symptoms are acute, cutting pain, then a period of ease. It is safe to infer that, where the pain is continuous, a portion of the mesentcry is invaginated. The minute intussusception occurs it becomes a mechanical irritant to the intestinal canal and throws the bowel into a condition of colonic peristalsis. The first result of this will be that all residual fecal matter below the intussusception will be promptly voided, sometimes amounting to two or three fair-sized stools. Following the emptying of the lower tract of its residual feces will next come mucus, and, as engorgement of the capillaries proceeds to stasis, blood will mix more and more with the stool, sometimes the stool being pure blood. The abdominal tumor might or might not be palpable, but as a matter of sequence following intussusception a tumor must exist. It is well to bear in mind the advice of Treves in this regard. He says: "Never deny the existence of a tumor until the abdomen has been examined during a paroxysm of pain." The tumor will originally appear over the site of the intussusception. It might extend across the abdomen and mislead as to its origin. The tumor is not always of the classic sausage-shaped variety, but might be round or nodulated. Paralysis of the sphincters, with consequent eversion of the anus and rectum, is an indication that the intussusception is low down in the colon, and a digital examination per rectum will find a low-seated intussusception, the feel to the finger being similar to that imparted by examination of the os of the cervix. During the intervals of pain the child might possibly engage in play or appear unconscious of any trouble. Medical help is seldom sought at the beginning of this serious disease, the mother assuming it to be nothing more than a diarrhea attended with the usual attacks of pain. The paregoric bottle or some other obtundant is usually sought and a dose administered, or possibly the physician is telephoned to, and he in turn orders a prescription through the druggist, with instructions to the mother to let him know in a day or two how the child is faring. Alas for the child! In the meantime the congestion passes into stasis, and, following stasis, we have a necrosis of the intussusceptum as a result of constriction and bacillary invasion.

Meteorism and peritonitis ensue. Enfeeblement from lack or nourishment progresses, shock accumulates, and the little patient dies in a few days or weeks, depending upon the virulence of the bacilli and degree of intussusception. In the few cases which, unaided, progress to recovery, a tumor will exist until the oftending intussusception has sloughed off. (Case reported.) There will be the characteristic nucco-purulent stools made up or bloody shreds of necrosed gut, and it is plain to infer "diarrhea," so called, will continue until the alimentary canal secures a relief from the invasion of extraneous gut and mesentery.

The pathology known as appendicitis has been called the American disease. To Reginald Fitz of Boston is accorded the honor of placing it, in 1886, as an entity in its proper rôle. Prior to this time appendicitis usually meant nothing more than inflammation of the bowels, the cause being nearly always ascribed to "catching cold." It has been comparatively late that the profession has accepted its frequent possibility in children. Dr. Hess of Chicago, in The Illinois State MEDICAL JOURNAL for May, 1905, cites a splendid collection of statistics with reference to its frequency in children. He speaks of one physician having fifteen cases of appendicitis in children under 2 years of age, two of these cases occurring in infants of six weeks. Murphy, in his recent and splendid brochure, entitled "Two Thousand Operations for Appendicitis," says this disease occurs in all classes with about equal frequency. With reference to its cause or causes, as in intussusception, no one particular cause can be assigned. In the 2,000 operations referred to by Murphy, feeal concretions occurred in 38 per cent., and substances aside from fecal in 2 per cent, of his cases. Constriction of the lumen at Gerlach's valve, excess of lymphoid tissue, torsion, uric acid diathesis and low bacillary resistance are among the frequent causes producing appendicitis. Admitting the child has appendicitis, how shall we diagnose it? In this, possibly more than any other serious disease, temperature, which is a guiding rule to many practitioners, serves less positively as evidence than in any other disease. To speak more definitely, appendicitis, sometimes gangrenous, frequently exists with subnormal or but very slight rise of temperature. Because the temperature does not go up to the usual danger line, the practitioner should not dismiss the case as inconsequential. I think it is Mickuliez who says, referring to appendicitis, that continuous temperature of 102° or over for five days means pus. Leucocytosis is an increase in the number of white corpuscles. Many authors lay great stress on this as a diagnostic method. Murphy says the more extended his experience the less value it has to him in the diagnosis of appendicitis. Murphy is correct, for, according to DaCosta, in his work on clinical hematology, if the absecss is walled off from the circulation, leucocytosis will not appear and the diagnosis will be misleading. However, a very practical objection to leucocytosis as a clinical aid is that very few men are prepared to make blood counts.

Shall we palpate the abdomen in appendicitis? I believe this to be a most pernicious practice in acute cases. If pus is suspected, we certainly commit a grave surgical sin in pressing the finger-tips deeply into the inflamed flank or abdomen, thereby possibly rupturing the protection that nature has built. Indent and percuss in your chronic cases in the intervals of the disease, but not in the acutely inflammatory. Palpation should always be made per rectum. This most valuable aid will frequently enable one to outline the swollen appendix or discover the tumor. In this connection the rigidity of the right rectus muscle can be felt by gently stroking the muscle over the affected area. A further objective symptom is that the child will unconsciously place its hands over the tender area, especially if it thinks the doctor is intent on making pressure. The characteristic posture of the child, lying with its legs well flexed for abdominal relaxation, will be a silent suggestion that something is wrong deep in the abdomen. Enuresis as a diagnostic aid is simply relative, depending upon the contiguity of the inflammation to ureter or bladder.

In what order of sequence shall we interpret the symptoms as being diagnostic of appendicitis? Douglass and Murphy lay stress upon this order: Pain, nausea or vomiting, tenderness and temperature. Murphy emphatically says that nnless these symptoms occur in this exact order he always doubts the diagnosis. Like in intussusception, there might be no prodromes, an attack occurring during sleep and the child being awakened by a severe bellyache. The pain is more frequently continuous than in intussusception. Nansea or vomiting are common to both, tenderness over the abdomen is much more quickly felt than in intussusception. This occurs because appendicitis is pyogenic and inflammatory from its inception, whereas in intussusception these are the secondary steps. The temperature, therefore, follows earlier in the order of sequence in appendicitis than in intussusception. But what is the convincing means of differential diagnosis in these diseases? The muco-bloody stools and constant desire for the chamber are the unfailing symptoms which confirm the diagnosis. What other conditions simulate appendicitis? In adults, chiefly infection of the hepatic and uterine appendages. In children, mueo-enteritis, and in all, occasional neuralgias due to some as yet unexplained eauses, coming from the right lower abdominal quadrant. Every practitioner of average experience will, I think, admit the latter possibility as not infrequently the case. Such must be admitted when, after opening the abdomen for a diagnosis of appendicitis, he finds no inflammation of the peritoneum, no bowel adhesions, no engorgement of lymphatic ganglia in the mesoappendix, and, lastly, no sign of distress in the appendix itself. Can an operator, in face of these findings, claim any superiority because he prides himself on his nerve and operates and incidentally collects a fat fee? I speak of the fee as purely incidental. I think I voice the feeling of a large class of intelligent men who know how to operate upon their eases, and who do operate as occasion requires, by saying that there exists an extreme surgical desire in many of the profession of to-day. This desire to me seems stimulated by the prospect of large fees. I believe if the fee bill for general surgical work was placed on the same level as scientific medical work in other lines that there would be much less surgery done to-day than is being done, and the laity would not be so eonscious of the existence of certain parts of their anatomical peculiarities.

The third abdominal disease I wish to speak of is typhoid. Possibly typhoid would be more correctly classified as a constitutional disease with abdominal symptoms. The profession has generally regarded very young children and infants as not in the line for this malady, partly on the theory of the supposed nondevelopment of Peyer's patches and also because hemorrhage is rarely present in infants and children. However, since the introduction of the Widal test the frequency of this disease is better known. The American Journal of Obstetrics for August, 1905, quotes from the British Journal of Children's Diseases, showing a record of 36 cases of typhoid in infants. It runs a much shorter and milder eourse than in adults. The author of the London article speaks of the difficulty of diagnosing the disease and suggests that pyrexia of infants be treated as typhoid. Other records could be eited, but the above is sufficient. To-day the diagnosis of continuous pyrexia in infants is fairly easy. We ean no longer speak of it as a "touch of malaria," for it is now generally known that where there is no infected anopheles mosquito there is no malaria, and that in northern latitudes malaria is almost a medical curiosity. It may be endemic in southern climes, but it does not exist here. In the absence of other well-defined symptoms the diagnosis of typhoid can easily and certainly be made or excluded by the use of the modified Widal's tests now put out by reliable houses. My experiences of about half a dozen tests have been with the Parke-Davis agglutenometer. These tests are simple to make and positive in reaction. The cost is trifling, and it does away with the necessity of finished technic and costly apparatus.

FRACTURE OF THE HEAD OF THE HUMERUS. E. Mammen, M.D., Bloomington.

Mr. S., a farmer, was thrown from his buggy, striking the ground upon the angle of his right shoulder. The case was treated four months as a fracture of the shaft of the humerus, about three inches below the head. At the end of this time the patient came to me. The shoulder was anchylosed, only a slight anteroposterior motion being possible, and was very painful at night. Examination by x-ray showed plainly that no fracture of the shaft had existed. Examination under chloroform demonstrated crepitus still existing in the joint. There were no cvidences of dislocation. It was decided to remove the fragments from the joint cavity. On incision both acromial and coracoid processes were found intact, but the head of the humerus was thoroughly comminuted, a large number of fragments lying loose in the glenoid cavity, mixed with coagula of blood. These particles were all secoped out and the cavity packed with aseptic gauze. There has been no infection up to this date. The operation was done about four weeks ago, and I predict that the patient will ultimately have a useful joint. The interesting feature of the case is the extent of the comminution of the head of the humerus. So far as can be ascertained the patient is free from specific disease and from fragilitas ossium.

A CASE OF CAMPHOR POISONING.* O. M. RHODES, M.D., BLOOMINGTON, ILL.

On Aug. 25, 1905, just at the noon hour, I was called by telephone to come three miles into the country. A woman was telephoning, and as she was excited and crying I was unable to get the details, but managed to infer that something serious had happened her husband. I was there in about fifteen minutes. I found the patient sitting in a chair, fearing to lie down and being unable to stand. Respirations, 60-70 per minute; pulse, 130 and weak, but regular; face bore an anxious expression and was very pale; lips cyanotic; pupils practically normal and equally dilated; cold perspiration on forehead and face; extremities cold and trembling. The patient was thoroughly conscious, but unable to speak above a whisper, and then but a few words and with much difficulty. On inquiry I learned from the patient himself that he had taken a dose from a bottle which contained only camphor and alcohol. It occurred to me that I might have a case either of wood alcohol or camphor poisoning, but on smelling the bottle I decided it must be camphor.

I immediately gave 1-250 gr. of glonoin by the mouth and 1-30 gr. of strychnia nitrate hypodermically. Within a very few minutes there was a cessation of difficult breathing, but it was soon followed by another wave-like attack, which began, as the patient afterward told me, in the feet and swept up the limbs and arms to the back and finally to the top of the head. This he complained of as being a very peculiar feeling-as if the top of the head were lifting off or as if he were swinging in the air. Marked dyspnea accompanied each wave-like attack, which was increasing in frequency, duration and severity, until the glonoin and strychnia were given. Shortly after giving the above I gave a pint of warm water, to which a little salt had been added, to precipitate any camphor remaining in the stomach and also to promote vomiting, the patient at this time being sufficiently recovered to object strenuously to the passage of the stomach tube. The warm salt water produced free emesis. The vomited matter consisted of material resembling the precipitate formed by placing camphor in water and smelled strongly of camphor. Several pints of the warm salt solution were repeated and vomited until the stomach was apparently pretty well cleansed.

From this time on the improvement was rapid, but there was slight dyspnea for a day or so, and, aside from a few doses of glonoin and strychnia, no further

^{*} Reported to Bloomington District Medical Society at Bloomington, Ill., Oct. 26, 1905.

attention was given. As expressed by the patient, after the attack there was no pain at all at any time. There was a tingling and numbness of the whole body, beginning in the toes and extending upward, and for the time being a paralysis of the legs. There was a feeling of swinging in the air and a sense of impending death from inability to breathe. There was no nausea before the warm salt solution was given, no cramps nor diarrhea.

By way of explanation I will say that the mixture taken was said to be made up of 2 oz. of gum camphor dissolved in one pint of alcohol, or 60 gr. of camphor to the ounce or 7½ gr. to the dram of solution. The patient had been in the habit of taking a teaspoonful of this solution at frequent intervals with no ill effect, but this time took, without measuring, probably twice that amount or two teaspoonfuls of solution. As the ordinary teaspoon holds considerably more than one dram, it is fair to suppose that the individual had been in the habit of taking about ten grains of camphor, or the maximum dose, but this time probably took between twenty and thirty grains. According to Potter, as many as 200 grains of camphor have been taken without fatal results, yet six or seven grains have produced extreme drowsiness and weakness of the pulse. Twenty grains laid an Alpine guide up for a day. It was about one-half hour after the dose had been taken that I saw the case, and I was not with him more than one hour.

BUREAU COUNTY MEDICAL SOCIETY.

The twenty-fourth semi-annual meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Ill., Thursday, Nov. 9, 1905, with Dr. C. H. Kemp in the chair. The following members were present: C. C. Barrett, C. H. Kemp, F. C. Robinson, C. A. Palmer, J. C. White, A. S. Rummell, William Kaull, W. C. Griswold, M. H. Blackburn, L. J. Otis and O. J. Flint; also M. N. Gernsey of Dover and C. M. Horner of Tiskilwa, who were applicants for membership to the society. Drs. Gernsey and Horner were duly elected as members. The secretary and treasurer's report was then read and approved.

The minutes of the previous meeting were then read and approved. The secretary was instructed to give any member who wished to accept an invitation to the banquet given in honor of Dr. Senn a credential as delegate from this society. The delegate to the state society meeting was instructed to vote "Yes" on the proposition for the organization of a physicians' defense society, for which purpose it is proposed to tax each physician \$1 a year. The committee on necrology presented their report, which consisted of a report of the death of Dr. J. A. Vixtrum, also Mrs. Landis, wife of Dr. B. F. Landis of Tiskilwa. The same was ordered to be placed on file and was as follows:

As we receive the report of the necrology committee we are reminded that death has but recently entered the home of one of our beloved members and taken Mrs. Gertrude Landis, wife of Dr. B. F. Landis of Tiskilwa. Six weeks prior Mrs. Moore, mother of Mrs. Landis, was taken from the same home, and this makes two vacant chairs. Those who knew Mrs. Landis intimately can better appreciate that Tiskilwa has lost one of its best citizens. She was always prominent in social and church work, but withal never neglected the least devotion of the home, nor was she ever too busy to respond in sickness and to assist the doctor in every way a wife could assist. Knowing this, we feel that there is nothing we can say or do to lessen the grief of our brother, but we wish to express our sympathy. Therefore be it

Resolved, That the members of the Bureau County Medical Society tender our heartfelt sympathy to Dr. Landis and to Mrs. Landis' surviving sisters in this their sad affliction; and be it further

Resolved, That these resolutions be entered upon the minutes of the society and that a copy be sent to Dr. Landis and the surviving sisters.

C. H. Kemp, President. O. J. Flint, Secretary.

Again we are called upon to chronicle the death of a member of the Bureau County Medical Society in the person of Dr. J. A. Vixtrum, who departed this

life at Colorado Springs on Feb. 9, 1905, after a somewhat protracted period of broken health. Probably no member of the society was better known throughout Bureau County than was Dr. Vixtrum. His social instincts gained for him many warm and enduring friends, and his genial, kindly disposition made memory and frielships all the more tenacious. He was a man who always carried sunshine and cheer with him into the sick chamber and inspired his patients with hope and confidence. He was a good physician.

Dr. Palmer moved that any member whose arrears on December 1 were more than \$2 should be dropped from the membership of the society, to be reinstated on payment of such delinquency. Carried. Dr. Blackburn moved that Dr. Richard McCarthy of Dover, who is unable to practice because of ill health, be placed on the honorary list. Carried. Dr. C. H. Kemp, retiring president of the society, who leaves this county to reside in Marshall county, Illinois, was made an

honorary member of the society.

Dr. M. H. Blackburn then read a report on a case of senile gangrene, which was as follows:

The patient who was the subject of the report presented himself at my office on August 1. For about eight weeks he had been troubled with a sore on the external surface of the tarso-metatarsal joint of the left small toe. It began as a blister and was treated with the various household remedies, not omitting the time-honored poultice. The patient, who was a farmer, 76 years of age, of very regular habits and always in excellent health, according to his own statement, now complained of severe pain. Examination revealed a fungus-like growth, about the size of a silver quarter, which was bleached out from the effects of a poultice. I dressed it with a dry boric dressing after a thorough scrubbing. On August 3 about the same conditions prevailed, only I could now see that the sore was dark and there was a tendency for it to spread. I continued boric dressing and ordered the leg elevated and patient kept quiet. I also told him the nature of the trouble and made a very guarded prognosis. On August 5 I visited the patient at his home and continued to do so from that time on. On August 7 Dr. Palmer saw the case with mc and also on several subsequent occasions. Dr. A. R. Edwards was also called to see him about the 11th. By this time three of the toes had become involved, while the dorsum of foot was also affected to a considerable extent. We were all agreed at this time that an operation was not advisable, as there was little hope of stopping the progress of the disease and the probabilities of an immediately fatal result very great. A continuance of the treatment which had been begun at first and which had never been changed was advised. Sugar being found in the urine in large quantities, the patient was given one-quarter grain of calomel night and morning for its effect on the liver. There was a gradual progression of the disease for the next ten days. On August 20 I first noticed a purplish spot on the ankle. There was also a considerable amount of suppuration, the patient showing decided symptoms of toxemia. Consultation was again called, and in spite of the very critical condition of the patient an immediate operation was advised as the only possible hope. The next day, under general ancsthesia, begun with nitrous oxid gas, I amputated the leg midway between knee and ankle. The patient rallied well from the anesthetic, and after twenty-four hours was able to eat and has continued to take three hearty meals a day ever since. Union was immediate, without suppuration. The temperature did not rise above 98 3/5. There was no pain in limb after the amputation. The pathologic condition was one of interest. Both tibial arteries were in a very advanced state of atheromatous degeneration and brittle as egg-shells. They would crush like shells between the thumb and finger. This same condition was apparently present in both legs and also in the arms. There was also a distinct atheromatous murmur in the heart. To-day, and in fact almost ever since the first two weeks succeeding the amputation, the patient has declared that he felt as well as he ever did in his life.

Discussion.—Dr. Scott said he thought Dr. Blackburn was to be congratulated on the good outcome of the case. He said he had some time ago seen a case which he had not operated upon because of the great mortality attending such cases. Dr. Barrett asked if it was certain it was diabetic gangrene, being inclined to

question the nature of the case because of its rapid healing. Dr. Griswold spoke of the possibility of the case having been one of eancer; he said he had never known of a case of diabetic gangrene to recover, only to improve temporarily, and he eongratulated Dr. Blackburn on the outcome of the ease. Dr. Horner asked it there was not great danger in giving an anesthetic in these eases. Dr. Kaull did not doubt the ease was one of diabetic gangrene, and thought that recovery was largely due to his mode of life and general good health. Dr. Palmer spoke of at least two eases in which spots of gangrene and diabetic cases had healed before the death of the patient, which had occurred a few months after their appearance. Dr. Blackburn, in closing, said in the future he would be more disposed to operate in these eases, as he believed he should extend to these patients what is practically their only hope of recovery—that is, an amputation. He said he had thought of cancer at first, but the later developments of the case seemed to indicate diabetic gangrene.

The other members on the program not being present, the society proceeded to the election of officers for the ensuing year. Dr. J. C. White of Seatonville was elected president, Dr. C. C. Scott of Princeton first vice-president, Dr. A. S. Rummell of Marquette second vice-president, Dr. O. J. Flint of Princeton secretary and treasurer. The meeting then adjourned.

CASS COUNTY MEDICAL SOCIETY.

The Cass County Medical Society met in Virginia, Dec. 13, 1905. Members present were Drs. Franken, president; George Bly, Jr., M. J. Palmer, C. M. Hubbard, A. R. Lyle, J. A. Gleen, D. Lyons, W. D. Humphrey and J. A. McGee; also Drs. C. E. Black, T. J. Pitner, J. W. Hairgrove and Dolear, all of Jacksonville, visiting. The regular order of business was taken up, and under head of applications that of Dr. J. W. Huston was received, the committee reporting favorably. Dr. Huston was elected to membership and the applications of Drs. C. W. Yeck of Arenzville and C. E. Soule of Beardstown was referred to the committee to act upon at our next meeting.

Dr. Dolear of Jacksonville presented an interesting pathologic specimen, showing a large eerebellar abseess as the result of a perforating mastoiditis, which was commented on by him and those present. Dr. J. W. Huston outlined a ease of syphilis which was characterized by an excessive thirst and the voiding of a great quantity of urine, three gallons in seven hours, sp. gr. 1.007, being the rate at one time. The ease has since done well on specific treatment alone, so that at present the amount of urine is but little above normal in amount and specific

gravity. The ease was commented on at some length.

Dr. Black, then being ealled on for an address, modestly retired in favor of Dr. Pitner, who spoke on methods of conducting society meetings and maintaining interest, among which he suggested the formation of a medical library, and spoke of its advantages, not only to the society, but individually. He also spoke of the advantages of the local societies to each physician, and said that it was almost a necessity to the successful physician. Dr. J. W. Hairgrove spoke on cooperation in the society and its advantages. He also spoke on cirrhosis of the liver and its operative measures, which gives best results, his remarks being both interesting and instructive. Drs. Black and Hairgrove spoke of the State Medical Society defense plan and recommended its adoption, suggesting the additional assessment of one dollar as being sufficient to meet its expenses. The society then adjourned to meet in Virginia in January.

CHAMPAIGN COUNTY MEDICAL SOCIETY.

The Champaign County Medical Society held its regular meeting in the parlors of the Hotel Beardsley, Champaign, Ill., Thursday, Dee. 14, 2 o'clock p.m. The attendance was the largest in the history of the organization. The following members were present: Drs. H. E. Cushing, C. B. Johnston, J. C. Dodds, A. S. Wall, C. F. Hough, C. F. Newcomb, W. K. Newcomb, W. L. Gray, C. H. Mills,

E. A. Kratz, W. E. Schowengudt, F. T. Rudy, H. C. Howard, Ellen Miner, Jennie Lyons and S. W. Shurtz, from Champaign; Drs. J. M. Bartholow, W. F. Burres, William Dillon, J. E. White and C. D. Gulick, from Urbana; Drs. N. P. Collins and A. L. Collins, from Mahomet; Drs. T. J. Exton and Lucy Exton, from Thomasboro; Drs. T. J. McKinney and T. E. Walker, Gifford; Dr. William Reese, St. Joseph; Dr. T. A. Dicks, Broadlands; Dr. S. S. Salisbury, Tolono; Dr. A. J. Foelsch, Bondville, and Dr. J. Brayshaw, Homer.

Dr. C. B. Johnston reported a case of auto-infection in a child simulating rheumatism. Drs. McKinney, Wall and W. K. Newcomb discussed the case. Dr. W. K. Newcomb gave a talk on his recent visit to the colony at Ottawa, which was very interesting and brought out many important points. The open-air treat-

ment for tuberculosis then brought out a general discussion.

This being the annual meeting, the following officers were elected: President, C. M. Craig, M.D., Champaign; vice-president, John Martin, M.D., Tolono; secretary-treasurer, C. D. Gulick, M.D., Urbana. Censors: J. C. Dodds, M.D., Champaign; J. S. Mason, M.D., Rantoul; J. S. Brayshaw, M.D., Homer. Program committee, C. B. Johnston, M.D., Champaign.

The following resolution was offered and unanimously adopted. The secretary was ordered to send a copy to each of the publications named:

Whereas, The Ladies' Home Journal and Collier's Weekly have made themselves conspicuous in the worthy cause of exposing the many evils and deceptions

of the patent medicine business and medical quackery in general; be it

Resolved, That we, the members of the Champaign County Medical Society, most heartily approve of the good work of these magazines, thus placing them in a position in enviable contrast with that of a great majority of the periodicals of this country.

No further business appearing, the society adjourned until its next regular meeting in February.

Dr. C. D. Gulick, Secretary.

CLARK COUNTY MEDICAL SOCIETY.

The society met in Dr. L. J. Weir's office at 3 p.m. President Rowland being absent, Vice-President Ryerson presided. Members present: Bradley, Duncan, H. W. Haslit, John Weir, Ryerson, P. P. Haslit and L. J. Weir. Visitor: Dr. S. Jumper of Marshall.

Dr. R. H. Bradley read a practical, well-prepared paper on "Pneumonia," taking the ground that the systemic infection-toxemia and not the amount of lung tissue involved is the dangerous factor. The latter is not an indication of the severity of pneumonia. The heroic treatment, bleeding, etc., of fifty years ago is now supplanted by the supporting, stimulating, symptomatic treatment, and watching, guiding the case carefully and using medicine only when positive indications arise. The paper was well received and the subject thoroughly discussed. Dr. Duncan agreed with the essayist, except he used digitalis in most cases. He did not see how he could get along without it in a case of pneumonia. Dr. Jumper said that three and four decades ago mercury and Dover's powder were used a great deal in the treatment of pneumonia in this county. Dr. H. W. Haslit considered primary pneumonia much less frequent than it was ten years ago. He also thought pneumonia is seldom a sequel to other diseases. He uses veratrum viride and thinks venesection proper in some cases. Digitalis and strychnia in weak heart periods are useful in some cases only. Dr. John Weir uses cold sponging for high fever if anything is needed. He mentioned as some of the complications meningitis, renal insufficiency, etc., and for their treatment suggested the use of stimulants when required and sedatives when needed. There is no routine treatment. L. J. Weir emphasized the point that the great majority of cases in the past few years follow grip or some other disease, and are irregular, atypical and not book cases of lobar pneumonia. They usually need stimulating, not depressing, treatment. Dr. Ryerson uses salicylate of sodium and has considerable faith in it.

It seemed to be the consensus of opinion in regard to pneumonia that the

systemic infection, toxemia and the condition of the patient are of more importance and a better guide in prognosis and treatment than the amount of lung tissue consolidated, and that the florid sthenic type is very rare in recent years. but when met with should be treated by venesection veratrum and purging with mercury and later on by the use of stimulants. The great majority of eases are of the asthenic, more or less catarrhal type, and need supporting treatment all the way through, while the ordinary case as met with in this part of the country in the past few years should be given eliminants, as calomel followed by salts; sponge baths, morphin for pain or cough if required, acetate of potassium or other diureties, ipeeae, and, later, ammonia for cough. Quinin and strychnia should be given as supportives all the way through. Strychnia and digitalis may be used late in the disease in large doses, if heart begins to fail, as indicated by weak first sound at apex, accentuated second pulmonic sound, staggering irregular action of the heart, dilatation of right heart with increase of dullness to right of sternum, and especially by dropsy and edema of unaffected lung tissue. Alcohol may also be given in this stage.

On motion it was decided to have a banquet at the next meeting and assess each member \$1 to pay expenses of the occasion. Drs. Duncan, P. P. Haslit and L. J. Weir were selected as a committee to arrange the banquet. Adjourned.

L. J. Weir, Secretary.

CHICAGO MEDICAL SOCIETY.

A regular meeting was held Oct. 25, 1905, with Dr. John J. Alderson in the chair. Drs. L. E. Schmidt and Gustav Kolischer gave a lantern-slide demonstration of cystoscopic views, which was discussed by Dr. Belfield and, in closing, by Dr. Kolischer. Dr. Arthur Dean Bevan made some remarks on "The Treatment of Actinomycosis and Blastomycosis with Copper Salts." Dr. Richard Dewey read a paper, entitled "Epilepsy; Malignant Tumor of Abdominal Wall; Hypodermatic Nuclein Treatment; Absecsses; Subsidence of Tumor, and Incidental Remarkable Relief of Epilepsy for Eight Years Since Treatment." This paper was discussed by Drs. Ochsner and Norman Bridge. Dr. E. R. Larned read a paper, entitled "The Injection of Air into the Circulatory System of Animals." This paper was discussed by Dr. Ochsner, and the discussion closed by the author of the paper.

DISCUSSION ON THE DEMONSTRATION OF DR. KOLISCHER.

Dr. William T. Belfield:—It would be improper to let this opportunity pass without congratulating both the society and Dr. Kolischer on this demonstration, which is as unique as it is admirable. I think we may draw from it the lesson that all of us who use the cystoscope are constantly preaching, namely, that this instrument possesses a practical value with which the profession at large searcely credits it, even to-day, in spite of the fact that it has been in more or less general use for some seventeen or eighteen years. It is not a toy, and it is not difficult to use. It is not difficult to see through it. While Dr. Kolischer has an experience and skill that very few of us can hope to attain, yet the things that he has shown us are within the reach of all of us without extensive experience, and I hope we will take that lesson home from this very admirable demonstration, that the cystoscope is an instrument worthy of general practical use.

Dr. Kolischer, in closing, said:—I want to thank the members of the society for the marked attention they have paid to our demonstration. I may say that we certainly reap the highest reward when a pastmaster in genito-urinary surgery,

like Dr. Belfield, considers our work satisfactory.

DISCUSSION ON DR. DEWEY'S PAPER.

Dr. A. J. Ochsner:—The ease that has been described by Dr. Dewey is certainly one of extraordinary interest. I had forgotten about the patient when Dr. Dewey notified me of the paper he was to read. It was a case in which a positive diagnosis of sarcoma had been made, and I was greatly surprised to learn that the patient was still alive and that the tumor had either decreased or disappeared.

There are always several possibilities in cases of this kind. First, there is the possibility of a mistaken diagnosis. The tumor may not have been a sarcoma. With the diagnosis made by Professor Senn, however, of sarcoma, I believe that is net a possibility, because in a large number of the cases I examined microscopically during the four years I assisted him the microscope in every instance confirmed the positive diagnosis that he had made from the gross appearance. There is probably no one whose diagnoses of malignant tumors are so absolutely certain to be correct as those of Professor Senn. I believe, therefore, we can take it for granted that in this case the tumor was a sarcoma and that it has disappeared. I examined the patient again to-day, and, although there is a little thickening. had I not known that a tumor had existed formerly. I should scarcely have noticed it. I believe that the point to be borne in mind in connection with these cases is that malignant growths of any kind and of any extent sometimes disappear. In my own experience there have been several of these growths that have entirely disappeared after various forms of treatment. It is doubtful, in my mind, whether in any one of them it would have made much difference what treatment might have been employed. In this case no microscopic examination was made, because the removal of portions of malignant growths, sarcoma especially, for diagnostic purposes, is, I believe, a form of malpractice which should not be employed, notwithstanding the fact that most of the works on surgery of ten or fifteen years ago advised this as a diagnostic means, because experience has taught us that where this is done the dissemination has been so rapid that recurrence was almost invariably the case. Had we employed this means of diagnosis I believe we would also have the autopsy to confirm the diagnosis in this case, because an autopsy would have ichowed within a year or two if this method of making a interposts had been resorted to. The nuclein injections at that time were recommended, and we have used them in many cases. We have never said anything about it, because there is danger in talking about such things before we know very much about them, and so far I have felt that I knew nothing about it.

I am glad Dr. Dewey lid not attribute the healing of this sarcoma to the use of nuclein. I believe that is an open question. A considerable number of inoperable and apparently insurable malignant growths have healed under my observation. In not one of them could I feel absolutely certain that this or that method had been the cause of the healing, except in superficial carcinoma with the use of the a-ray. But this case gives us food for reflection and thought. It gives us hope that malignant growths may be generally curable. My own persual opinion has been, for years, that we will find malignant growths to be as curable as syphilis or malaria, or any of those diseases that are the most curable at all affections we have to treat.

Dr. Norman Bridge:—I would like to ask Dr. Dewey if he has ever used nuclein for epilepsy uncomplicated by tumor?

Dr. Dewey: —I have never used it in a case of epilepsy except incidentally, as in this case.

DISCUSSION ON THE PARTS OF THE E. LARVED.

Dr. A. J. Ochsher:—This paper is exceedingly valuable. It is, however, based in a mishaken comprehension of the conditions as applied to deaths which occur during surgical operations, from air embolism. A patient does not die from quantity of air, but from a large quantity applied at once. These horses would have stood an indefinite amount of air but if that air had been introduced in the manner in which it is introduced during operations they would have died. That is why, in Professor Senn's experiments death occurred in the sheep. Professor Senn's conclusion virtually states that a patient or an animal nies because there is a sufficient quantity of air to distend the heart to such an extent that it ceases to pump blood. The same criticism would apply to Professor Hare's experiments. If you inject air through the cannels of a hypodermic syrings, the quantity of air present in the heart at as to reuse death. It may seem preposterous for one to make a statement like this, but if you have ever seen a patient die with air embels of the professor have a very distinct then they have ever seen a patient die with air embels or you have a very distinct then they have ever seen a patient die with air embels of the patient as to recome to make a statement like this, but if you have ever seen a patient die with air embels of the patient of the patient of the make a very distinct then the how the thing happened. After seeing

air inspired in many cases from small wounds in the jugular vein, and seeing no harm from this, I had come to the conclusion that Hare was right and that tne sheep in Professor Senn's series had gotten too much air. Under ordinary circumstances I do not believe a patient would die from this cause, but an observation which I made convinced me that it is the great quantity of air inspired at once that causes death. The case was one of carcinoma of the breast, with involvement of the axillary and cervical glands. It was shortly after Halsted reported his cases of dissection of the axina and the cervical region, so I proceeded to dissect the glands in the cervical region, and finding what I took to be a gland about two centimeters in diameter, I proceeded to dissect this gland, thinking that it had displaced the deep jugular vein backward. As a matter of fact it was a conglomeration of glands surrounding the deep jugular vein and holding it wide open, not compressing it in the least; consequently, in making my section between the site of the supposed gland and soft tissue above, I cut off the vein just at the moment when the patient was making an inspiratory motion, and the patient inspired, into the vein and into the right heart, an enormous quantity of air. The heart began to flutter at once. There was not the hissing sound that is made when one nicks the jugular vein a little, which means nothing, but it was a sound one would remember. It was plain that a large quantity of air had entered at once. There was a flutter in the heart and the patient was dead. These patients do not die Lecause you inject a little air through a hypodermic syringe. This series of carefully-recorded observations brings out the harmlessness of hypodermic injection in a most effective manner. Among the enormous number of injections made in hospitals I have never seen any harmful effects in the way of air embolism in any case, but this was never brought so forcibly to my attention as by this splendid paper.

A regular meeting was held Nov. 1, 1905, with the president, Dr. Charles S. Bacon, in the chair. Dr. William A. Evans exhibited a specimen of carcinoma of the head of the pancreas. Dr. Thomas A. Woodruff read a paper, entitled "Changes in the Retina and Retinal Vessels as an Indication of Lesions in the Heart and Blood Vessels." Dr. Daniel N. Eisendrath followed with a paper, entitled "The Early Diagnosis of Acute Abdominal Conditions," which was discussed by Drs. A. J. Ochsner, Lucy Waite, and the discussion closed by Dr. Eisendrath. Dr. Henry Gradle read a paper on "The Efficacy of Salicylates in Inflammatory Diseases of the Eye," which was discussed by Dr. Edwin B. Tuteur.

CHANGES IN THE RETINA AND RETINAL VESSELS AS AN INDICATION OF LESIONS IN HEART AND BLOOD VESSELS.

THOMAS A. WOODRUFF, M.D.

CHICAGO.

(Abstract.)

In addition to local eye disease, changes are often found in the fundus oculi which denote general vascular change. The ophthalmoscope is the means of detecting such conditions early and when otherwise unsuspected. Some of the more common fundus pictures show inequality in caliber of the vessels at various points in their course, amounting in some places to almost complete disappearance of the blood column. There may be broader light reflex from the vessel and white stripes may be seen running along each side of the vessel, or the vessels may be tortuous. A sclerotic artery may cause compression and loss of light reflex on a vein at the point where the artery crosses it, or if the sclerosis is advanced the vein may be almost entirely obliterated. Where the vein crosses the artery, on the other hand, it appears to hook over it with less signs of compression. Edema of the retina may follow from interference with its nutrition and appears as a grayish haze near the macula or along the vessels. Hemorrhages occur in late stages. Accumulation of toxic products in the blood is responsible for many of these vascular changes. Gout, syphilis, rheumatism and alcoholism play an important rôle in the causation of these degenerative changes. Degeneration in the retinal vessels points chiefly to chronic gout as the cause. The presence of hemorrhages indicates weakened, degenerated vessel walls, accompanied by increased arterial pressure and vascular lesions in the heart, Bright's disease or the anemias. Hemorrhages are seen usually in the chronic forms of kidney disease, especially granular kidney. Degeneration of the nerve fibers occurs simultaneously with the hemorrhages and takes the form of whitish plaques and spots near the optic disc and macula. At the macula they frequently assume a characteristic stellate appearance. The prognosis depends chiefly on the condition of the heart, kidneys, etc., to which the eye findings point. Hemorrhages in the retinal vessels usually point to serious changes in the general vascular system, heart, kidneys, brain, etc. The average duration of life after the appearance of advanced retinal changes is about two years.

DIAGNOSIS OF ACUTE ABDOMINAL CONDITIONS. D. N. EISENDRATH, M.D.

CHICAGO.

Dr. Eisendrath laid stress on the fact that many of the cases seen by surgeons are not diagnosed as early as they might be if a more careful study of the patient's general and local conditions was made. He suggested dividing the acute abdominal affections, if seen at an early period of their development, into four classes: 1. Those in which the symptoms of suppuration appear early and predominate. 2. Those in which pain of varying intensity is the predominant symptom. It may be followed by signs of localized or diffuse peritonitis or by the symptoms of intestinal obstruction. 3. Those cases in which the symptoms of intestinal obstruction are the most prominent from the onset. 4. Those in which signs of internal hemorrhage are marked and are followed by signs of peritoneal irritation, as bowel paralysis of milder degree than in obstruction.

The first class included non-calculous cholecystitis, infections of the liver, infections of the kidney, primary forms of peritonitis and subphrenic abscesses. The second class included appendicitis, gall stones, perforation of the hollow viscera, acute pancreatitis, renal colic, kinking of the ureter in floating kidney, embolism or thrombosis of the mesenteric vessels, torsion of the pedicles of ovarian or nterine tumors and of the spermatic cord, visceral crises in tabes or in skin disease of the erythematous type. The third group included all the forms of intestinal obstruction. The fourth group included extraperitoneal hemorrhage from the rupture of an extrauterine pregnancy and intraperitoneal hemorrhages from other causes.

Special stress was laid on a careful previous history of the patient. It is also necessary to secure as soon as possible an accurate history of the manner in which the present illness began. This is difficult if the patient is apathetic, as in typhoid fever, and also in the case of foreigners when an interpreter is lacking. The examination of the patient himself may be divided into the examination of the general condition and that of the abdomen itself. In the former it is important to observe the expression of the face, the sunken eyes and attitude of the patient. In many of the acute abdominal conditions, patients hold the abdomen rigid and the breathing is shallow and costal in type, and there is more or less general collapse or shock. This is especially the case in perforation of the hollow viscera. It is well to note the pallor of the visible mucous membranes. The pulse is a good indication, as peritonitis advances it becomes more rapid and jerky in character. The presence of fever is favorable according to the time at which it appears. If present from the onset, it means some tocus of suppuration, like those mentioned in the first group. If it comes on gradually, it signifies encapsulation of pus. The most severe cases of peritoneal infection and of abdominal obstruction are often unaccompanied by any temperature. A sudden fall in temperature is an important danger signal, indicating gangrene or perforation. Leucocytosis is only of value if taken in conjunction with other symptoms of encapsulation or spreading infection. The author believes that much reliance could be placed on a gradual increasing leucocytosis as indicating the severity of infection, but in even serious cases a leucopenia may at times be present

owing to the lack of resistance on the part of the organism. It is well also in the general examination to note the relation of nausea and vomiting to the pain. It they accompany the initial pain or follow it within a few hours and do not recur, it is to be considered as being more or less reflex in type. Pain, vomiting and rigidity is the most frequent sequence in such diseases as appendicitis and gallstones. If the nausea and vomiting continues and increases in frequency, it is to be looked on as a danger signal.

Much emphasis was laid on the local examination of the abdomen, and the general practitioner was urged to make a careful physical examination of the patient's abdomen, which should embrace, first, the location of the pain and the direction in which it radiates; second, the amount of distension of the abdomen, whether local or general. If the distension increases as the hours pass, it signifies either a beginning peritonitis or an obstruction. The latter is accompanied by continuous nausea and vomiting and but little rigidity in the abdomen, while in the former there is uniform rigidity and tenderness over the entire abdomen. The third important point in the physical examination is to observe by the gentlest touch possible the amount of muscular rigidity. There is a reflex contraction that often persists after the administration of anesthetics. It is most marked at the onset of infection and remains localized if the condition is progressing to a favorable outcome. If, however, peritonitis sets in, this rigidity gradually spreads over the entire abdomen so that the whole anterior abdominal wall feels boardlike. The fourth point in the physical examination is the detection of superficial tenderness, which always accompanies the rigidity. He warned especially against the too prevalent method of attempting to detect rigidity and tenderness by pushing the fingers firmly against the spine of the patient. He did not consider the absence of liver dullness a sufficiently frequent or reliable sign to be of great value. He also considered this true regarding dullness in the flanks or above the pubis, due to free fluid in the abdominal cavity. In the early hours of a beginning peritonitis, unless the quantity of fluid is quite large, which is rarely the case, it is difficult to detect it on account of the muscular rigidity and the presence of more or less distension of the abdomen.

It was of the utmost importance in every case to make rectal and vaginal examinations. A rectal examination throws great light on the presence of an inflamed appendix or of an abscess due to an appendix pointing toward the pelvis. Often at times an intussusception could be felt through the rectum. Every attempt should be made to obtain the passage of flatus or fecal matter before a diagnosis of intestinal obstruction was made, but such efforts should not be persisted in more than a few hours, since every hour's delay means much for the patient's chances. He warned against giving cathartics and opiates for every abdominal pain until the diagnosis has been made of the condition being one not requiring operation.

DISCUSSION ON THE PAPER OF DR. EISENDRATH.

Dr. A. J. Ochsner: - This paper is of very great value. It is plain that the paper deals with the subject in a comprehensive manner and that it contains the points which must necessarily be borne in mind in order to enable the physician to make an early diagnosis in these intra-abdominal cases. The paper starts out with the statement that in every case a careful physical examination should be made, and that is a point in which the practitioner is especially lame, not so lame as he was ten years ago, because an early diagnosis then was rarely made, because an early physical examination was almost never made. It is not so difficult to make a diagnosis as one would imagine if you strip the patient, examine the abdomen, and determine the points Dr. Eisendrath has pointed out. course, every one will make a diagnosis more readily the second than the first time, so that it is largely a matter of experience. One point should be brought up in connection with this which is just being appreciated, namely, that we should become more and more familiar with the living pathology, that is, with the findings in the living body in intra-abdominal cases. The best diagnostician undoubtedly is the one who carefully makes his diagnosis and then either confirms

it or disproves it by looking into the abdomen. Fortunately the practitioner of internal medicine is beginning to look into more abdominal eavities than was the ease some years ago. Some years ago a diagnosis was made and the abdomen of the patient not opened, and if it was opened the diagnostician never saw what was found, and probably never determined this faet. There is one danger, however, in connection with the first caution that Dr. Eisendrath gave, of always making a physical examination, and this danger comes from the fact that many practitioners are confused concerning what comprises a eareful and thorough examination. Many practitioners have the impression that thoroughness and violenee are the same thing. If they do not inflict violence on a patient's abdomen, they feel that they have not been thorough in the examination. I have repeatedly seen patients only slightly ill, who had a chill within a few hours after one of these supposedly thorough, but really violent, examinations. These applieations of diagnostic massage, these concentrations of physical force, naturally caused a considerable increase in the pathologic condition. There is more to this than one might suppose, so I believe that, while we should be thorough, we should bear in mind that it is not well to eause too much irritation in making a physical Moreover, the moment we are severe in our examinations the abdominal museles will resist, and we can not feel what is behind them, so that really the object of the examination is defeated by this lack of appreciation of eonditions. The paper is so full of exceedingly valuable points, and I know there are many points that we have not heard, that it would take too long to discuss all of them. I believe the conclusions which Dr. Eisendrath has given us are correct, that with a eareful examination in most cases a diagnosis ean be made. Of eourse, it ean not always be made. Every one makes mistakes in diagnoses, and the man who makes the most diagnoses probably makes more mistakes than the one who makes only a few. If you have a hundred cases to examine, you may make a dozen mistakes, but if you have only three cases to examine you eould not. There is no one who is infallible in making diagnoses, but as a general proposition that conclusion is correct.

The next conclusion is absolutely correct, that cathartics should never be given in cases while one is waiting to make a diagnosis. It is a habit of many to give something while the diagnosis is under consideration, and about the simplest and easiest thing to give is a cathartic, and I believe in that way an enormous amount of harm is being done. The same thing is true of opium. Opium should never be given in intra-abdominal conditions until a diagnosis has been made, and then it should never be administered unless the alimentary canal is empty. If the alimentary canal is empty, so that obstruction caused by the presence of the opium does not favor decomposition and further infection from the intestinal

canal, it may be proper to give opium in some of these eases.

Dr. Eisendrath (elosing the discussion):—I want to emphasize several of the points Dr. Ochsner has made, as I did not lay sufficient stress on them in my paper. One is the method of making a physical examination. If you ask doctors to examine cases in a hospital, particularly acute cases, the first thing they do is to take their hands and prod them through the abdominal wall until they reach the pelvic brim. It seems rather horrifying to a surgeon who knows what the possibilities are with regard to the bursting of an abseess or anything of that kind by such a violent procedure. Some physicians do not seem to have the right conception of making a physical examination. They think they must palpate something deep in the abdomen. I mentioned that in my paper in speaking of the method of examining for rigidity. The whole physical examination of the abdomen can be undertaken with the slightest amount of pressure if one aecustoms himself to it, and, of course, this comes from examination of a large number of cases. With the least amount of pressure, one ean determine whether there is any abdominal rigidity or not. This can be elicited simply by taking the tips of the fingers. pressing lightly from one point of the abdomen until you reach the next. I had oecasion to sec a man a few days ago with a temperature of 104° and pain in the abdomen. I examined the abdomen in a systematic way by looking at it first, after taking the pulse and noting other symptoms. In passing my hand gently

over the man's abdomen, I found that the whole abdomen soon relaxed until I came to the renal region, and, after determining that museular rigidity was most marked there, I began bimanual palpation of the abdomen and found a tender enlarged kidney. I would emphasize, therefore, the point that one can and should make all of these examinations with the utmost gentleness. As to the differential diagnosis between appendicitis and pelvic disease, referred to by Dr. Waite, I did not mention it in my paper, because there are so many points of differentiation between appendicitis and other conditions. We all make mistakes in the differential diagnosis of these conditions. For instance, I operated on a case that was diagnosed as appendicitis and found a pyosalpinx. Bimanual examination is a great aid, especially if it is made under the influence of an anesthetic. In a great many cases I have found the appendix has been secondarily infected from a pyosalpinx, so that the symptoms of one overlap those of the other.

In regard to the differentiation of pelvie conditions from other pathologic conditions by the pulse and temperature, my own experience has not taught me that. But I shall be glad to observe this in future cases. I would hardly, however, place reliance on that alone, in the absence of a physical examination and other symptoms. In salpingitis or in pelvic conditions, there is usually a low pulse and a high temperature, while in appendicitis there is a high pulse, with comparatively low temperature. These two symptoms combined with others may be of

considerable value.

DISCUSSION ON THE PAPER OF DR. GRADLE.

Dr. Edwin B. Tuteur:-I desire to speak of one point in connection with the use of the salieylates, more especially the salieylate of soda, but not their use in regard to inflammatory diseases of the eye particularly. Having had a very considerable experience in its use, I have found that, as a rule, when given in tablet form, it exerts considerable influence on the gastric mucous membrane, even if you follow it with a large draught of water. The salieylates should be given preferably in a solution of pepsin in order to avoid irritation of the gastrie mucous membrane. If this is not well tolerated, then I have often times used with considerable success the milk of magnesia, such as the preparation of Phillips. Furthermore, the preparation known as hydrastoids is used most successfully in giving the salicylate of sodium. In using these agents I have found also that it is best to give a large glass of water immediately following the dose of salicylates. When this is done, there is rarely any irritation and the tolerance is practically complete. Of course, there are exceptional eases, and in these I have often times used the salicylate of sodium, properly guarded, per reetum. As regards the depression that is caused by the salicylate of sodium, which we meet with so often in giving these large doses, of which Dr. Gradle spoke, and we must given them in order to obtain success in the treatment of many diseases, this can be obviated to a great extent by combining with it small doses of tineture of digitalis, preferably the fat free, or small doses of strychnin in tablet or pill form may be given immediately following each dose of the salicylate. In combining it in this way practically all symptoms of depression can be obviated. Speaking of large doses, I have given as much as 200 grains in twenty-four hours, without the production of gastrie pain or irritability or any marked symptoms of depression.

A regular meeting was held Nov. 15, 1905, with the president, Dr. Charles S. Bacon, in the chair. Dr. Joseph C. Beck read a paper, entitled "Angioendothe-lioma of the Ear," and exhibited the patient.

Dr. J. Holinger followed with a paper, entitled "The Present Status of Otology." Dr. Mortimer Frank read a paper on "Amaurotic Family Idiocy."

DISCUSSION ON THE PAPER OF DR. MORTIMER FRANK.

Dr. Alfred C. Cotton:—Some of you may know that I have reported three cases of amaurotic family idiocy. The first case was reported some six years ago, the diagnosis having been confirmed by ophthalmoscopic examination by Dr. Wescott. In another case, observed two years later, the diagnosis was also con-

firmed by the same ophthalmologist, and in a third case, which I reported this summer before the American Medical Association, the ocular findings were described by Dr. Mortimer Frank. I have here some photographs of these cases which may be interesting to pass around. The first case, an infant of 1 year, was seen before any symptoms whatever had been noticed. There was no abnormality. Later, when the infant was 22 months of age, I was enabled to make a diagnosis of amaurotic family idiocy, which was about five months before death. The next photograph is a picture of the sister of this infant. It was taken a week before death, and in this case also a diagnosis of amaurotic family idiocy was made. This patient I showed to the Chicago Pediatric Society when it was 1 year of age. It died at 22 months.

The next photograph is one of the case referred to in Dr. Frank's paper. 1 saw this patient through the courtesy of Dr. R. A. Martin the first of last March, at which time the child was one year old. I show you another photograph of the same child which was taken at 17½ months. This child I saw a few days ago.

She is still living at the age of 201/2 months.

There is very little to add to the clinical findings of amaurotic family idiocy. Occasionally a case is probably correctly diagnosed before the eye findings have been disclosed. The characteristic eye ground has been well described by Dr. Frank in his paper, and the drawing he has passed around is perhaps the very best extant. The question as to a distinct disease has been raised in connection with amaurotic family idiocy, and it deserves more than passing interest on account of the group of symptoms manifested. The agenesis corticalis of Sachs, a position from which he has retreated somewhat during the last few years, has given way to a general tendency to regard the condition as a degenerative process, beginning in the large ganglion cells of the gray matter, with secondary degeneration of the white matter of the nervous system. This opinion is held by Sachs to-day, as I understand him.

Dr. Frank has told us that there have been only 74 cases of amaurotic family idiocy reported up to July of this year. At the time I reported my first case, six years ago, there were only 36 cases on record. The fact that so many cases have been reported in the last six years shows that the profession is more alive to the symptom-complex of this disorder. In other words, some of the cases must have been overlooked prior to that time. This leads us to conclude that many cases of amaurotic family idiocy are overlooked to-day, since in many instances the symptoms are so obscure as to pass for blind idiocy, etc., and as the eyes are probably not examined a correct diagnosis is not made. The disease is undoubtedly more prevalent that we have been led to believe, and, that being the case, amaurotic family idiocy is worthy of separate discussion.

As to the etiology, Hirsch, some eight years ago or longer, ventured the suggestion that it was due to some toxin in the mother's milk. Sachs combated that idea, it was thought successfully at the time, with the statement that two of his cases were bottle-fed infants, so that that etiologic theory was apparently laid on the shelf. It seems to me, however, we have not exhausted the etiology along the line of food defects. The tendency has been to claim heredity as an etiologic factor. The fact, too, that most of the cases reported are of Jewish parentage has been dwelt on extensively. But, if we can claim heredity for this disorder, we must remember that perhaps every second child in the family escapes the disease. While there is a family tendency in this disease, yet in a family of six children three only have had amaurotic family idiocy, the other three escaping. In the majority of cases in which two or more instances are found in the same family, they alternate; that is, successive children do not show this disease. In the first two cases I reported, children of the same parentage, they were preceded by a healthy child and followed by a healthy child, both of which are still living. A third case with amaurotic family idiocy was followed by another healthy child, and still another this summer, which is now under observation.

My attention was directed very early to the analysis of the mother's milk in these cases, and hence I have had many opportunities for observing the milk. There seems to have been, in this group of cases, a paucity of fat in the mother's milk. All of the children were breast-fed. In the same mother, when two of the children, to my certain knowledge, eseaped the disease, the milk was fairly rich in fat. The rôle of leeithin in the development of nerve cells led me along the line of the hypothesis of a deficiency of leeithin in the mother's milk. The idea also occurred to me that a child might develop amaurotic family idiocy who was fed on cow's milk which is poor in lecithin. Whether we accept the theory of abiatrophy advanced by Gowers or the theory of degeneration of nerve structures. which is Sachs' last stand in regard to the pathology, we need not decline to consider the possibility of a deficiency in some constituent in the mother's milk. Whatever the hereditary tendency may be to abiatrophy or to the arrest of development or to degeneration of nerve structures, there is no evidence that these children are not born normal. In fact, the evidence is to the contrary, I believe without exception, and, if I am wrong, Dr. Frank will correct me. All these children have been deelared normal at birth and even up to several months, perhaps to the sixth month, in some cases to the twelfth or sixteenth month, before any symptom of abnormality develops. If it can be demonstrated that ehildren in families where amaurotic family idioey has eropped out, may, by being fed on food rich in leeithin, do better and their lives be prolonged, then it is a good thing, and I think the theory of lecithin paucity is worthy of serious considera-

In the last case, the disease was well advanced at 1 year of age, with the characteristic eye symptoms shown you in the drawing, and there were present nearly all the typical symptoms, including the hyperaeusis of Sachs, the exaggerated acoustic motor reaction of Falkenheim, convulsions, and explosive laughter to which Falkenheim ealls attention, so that, under the influence of atropin in examining the eyes, Dr. Merrill made a note of atropin poisoning, because, she says, the child was delirious. Subsequently I learned that, by blowing on the ehild's face, one could cause laughter and provoke an uncontrolable spasm. Although all of the symptoms were so well developed in this case, life has been prolonged with much less evidence of rapid deterioration than in any of the eases I have seen or in the majority that I have reviewed in the literature. In addition to the mother's milk which I have examined, and which for a time, by the best hygiene and careful feeding of the mother, was greatly improved, the child has been supplied with yolk of egg thrice daily, and later neuro-lecithin, in half-grain doses, was given five times a day. I can not escape the conviction that the child's life has been prolonged, although it was in an advanced stage of the disease, by the addition of this element of food.

DISCUSSION ON THE PAPERS OF DRS. JOSEPH BECK AND J. HOLINGER.

Dr. Norval H. Pieree: - Dr. Beek has presented a very interesting case. As it would require more time than can be devoted here to the study of the specimen to give an adequate opinion regarding the microscopic character of this tumor under the microseope, I shall desist from expressions on this point other than to say that, as far as my examination went, the specimen reminds me very much of a tumor which we find sometimes on the anterior portion of the septum, which has been ealled bleeding polypus or telangieetoma. That it is highly vascular there is no doubt, but whether this vascularity would account for the excessive hemorrhage which Dr. Beck reports is rather doubtful. I would rather regard it as a manifestation of hemophilia than the result of vascularity of the tumor. The question arises as to whether in a ease of tumor in the external auditory canal or of the middle ear, dissociated with suppurative processes, we should do an external operation. In this ease Dr. Beck felt called on to do a radical operation. In doing this he must have destroyed the conducting apparatus of the middle ear, and doubtless hearing in that ear is at present of no practical use to the patient. Can we remove these tumors without saerifieing the function of the middle ear? I believe this should always be borne in mind and wherever possible the tumor should be removed by an operation through the natural passagés. Whether this could have been done in this case is, to my mind, doubtful. we should not resort to the external operation, and especially to the radical operation, by which we sacrifice the contents of the tympanic eavity, without due thought. As to neuroplasty, I should certainly not advise an operation of this sort in this case inside of one year. It is a fact that a majority of these cases of facial paralysis recover after a time, even when there is strong presumptive evidence that the nerve has been more or less completely severed. The results of neuroplasty are not what the writers on this subject would have us believe. They are not at all encouraging in my experience. I have seen some of the results of neuroplasty in New York. While the operation is not especially dangerous, yet we do run the risk of paralyzing the nerve on which you endeavor to ingraft, and, inasmuch as recovery takes place after six months and even a year, I should say it would be wise to wait before performing such an operation.

With reference to the paper of Dr. Holinger, he has given us a very interesting résumé of Professor Sibenmann's work, and no one would endeavor to controvert the fact that he has been a great leader in the advancement of otology, so great a leader, in fact, that many regard him as an iconoclast of rather severe type. But he has made over otology in many of its branches. His colossal work in progressive spongification has turned over a new leaf in a subject which was wrapped in ignorance up to the time that he began his work. I agree with Dr. Holinger as to the points of differential analysis between this and the so-called catarrhal diseases of the tube. I know that Dr. Holinger winces a little at the use of the words "catarrhal diseases," but I believe we must retain, for a time at least, this nomenclature that is embraced under the head of catarrh of the Eustachian tube and the middle ear. We fought this all out at a meeting of the Chicago Laryngological and Otological Society, and I do not believe it will do any particular good to open the wound again. The differential diagnosis between implication of the labyrinth and the various branches of the acoustic nerve is very interesting. However. these diagnoses can not be made unless the diagnostician possesses a somewhat elaborate series of tuning forks. It is utterly impossible, in my opinion, to do good work in otology without possessing a continuous series of tuning forks, pipes and whistles, and it is as impossible to make diagnoses of ear diseases without thoroughly investigating aural and osseous conduction by means of this apparatus. It is surprising how very few men do this.

Cholesteatoma and the radical operation are somewhat connected in this city with Dr. Holinger's name. He was one of the pioneers who brought to our attention the good results of radical operating and the comparative inefficiency of local treatment in severe cases. I can hardly add anything to what Dr. Holinger has said regarding this. It is not especially new nowadays, but the fact that we had better leave a postauricular opening in our cases of extensive cholesteatoma is

recognized, I believe, by the best operators.

Dr. W. F. Coleman:-We are very much indebted to Dr. Holinger for so much of what he has said. He has covered the subject of the pathology of otology so thoroughly that there remains little to discuss. For my knowledge of spongifieation of the labyrinth I am indebted to the essayist, personally, for the first exposition of it made some years ago. I will add to what has been said only a few words in regard to therapy. We may assume that there are cases of chronic deafness which are amenable to treatment, as well as most of the acute cases. In the more chronic class of cases, there is an adhesive or proliferative inflammation of the middle ear, and later an atrophic catarrh. Dr. Gradle, in an excellent recent text-book, has said that in this class of cases, when the Eustachian tube is patent and gross lesions are absent in the nose, the efforts of the physician in the line of treatment are rather hopeless. This voices the opinion of the profession, and it is to this class of cases and their electrical treatment I wish to allude. Such aurists as Schwartze, Politzer, Knapp, Burnett, etc., expect no improvement from electrical treatment, except to the tinnitus and dizziness. On the other hand, such electro-therapeutic authorities as Erb, Beard, Rockwell, Lautenbach, Burnett and many others report favorable results.

Recently a prominent oculist asked me about the technic of the use of the electric current in optic atrophy. I advised the alternating current and, as a sec-

ond device, the galvanic interrupted, and incidentally remarked that the faradic current would be uscless. He and his office confreres, who have a magnificent collection of electrical appliances, were of the opinion that the galvanic interrupted is the same as the faradic. Such opinions may account for the misuse of and skepticism regarding a valuable therapeutic agent. What is the effect, for instance, of the galvanic current? Some neurologists think that the whole elass of electrical appliances is simply suggestive. My answer to that is: Do you think you can suggest muscular contraction, sensation of decomposition as produced by a galvanic current?

Let us consider the condition of the middle ear and the indications for treatment. In chronic progressive deafness the ossicles are rigid, there is hyperplastic or atrophic tissue, of which we wish to dispose. We wish to improve the nutrition of the middle ear and the function of the auditory nerve, because the ear that does not hear will lose its function, just as the optic nerve will in squint, which is sufficiently demonstrable. Theoretically these things may be done by the use of an electric current, and a very respectable number of practitioners believe they can be done. Permit me to cite a few cases of chronic deafness among a considerable number that have been treated within the last ten years. It is well to take crucial cases, such as have been treated previously and have had the diagnosis established, so that we may not mistake post hoc for propter hoc.

A girl, 15 years of age, who had progressive deafness for five years, was treated by a prominent otologist for twelve months and by myself for twelve months with pneumatic massage without any improvement in her hearing. The case was one of chronic hyperplastic condition of the middle ear. I put her on a so-called sinusoidal current; that is, an alternating current from the dynamo of a Victor machine. That current, in spite of what books and authors say to the contrary, has a highly electrolytic or chemical effect, which I have demonstrated to students repeatedly. I used the current with an electrode in each ear for ten minutes daily for three months. The hearing improved, for the voice, from one foot to twelve feet, and this remained five years later. An ideal current for such cases is the Morton wave, or muscular contraction from a static machine. This stimulates the contraction of the tensor tympani muscle. I use the Rumkdorff coil, the interrupter of which works too rapidly to produce any muscular contraction, so I add a slower mercury dip interrupter and obtain an excellent Morton wave current. To those of you who are using the coil I will say it adds infinitely to the value of the coil by giving a current similar to one of the static machine.

In the case of another patient, aged 45, who had catarrhal deafness for 20 years, I used the Morton wave current for three months irregularly, say once to three times a week, and it improved his hearing so considerably that he told me he eould now hear a clock ticking in his room at a distance of 25 feet, which he never did before, and that he never asked any one to repeat his remarks now, as he had always done previously. At present I am treating a patient, aged 39, with suppuration of the ear that has existed since childhood. I tried the Morton wave current, also the sinusoidal, without effect, and recently, after seeing a very favorable report by Dr. Moreau Brown, of this city, on vibratory massage over the mastoid, etc., which I had been credulous about, I attached the vibrator to a Victor motor and applied it. The patient, who could hear a forced whisper with the right ear at one foot and with the left ear at four feet only, after twelve treatments heard at six times that distance in the right ear and at three times in the left ear. I lay no particular stress on one case of that kind, but Dr. Brown and others report remarkable improvement in hearing in many cases from vibratory massage.

Dr. Peter Bassoe:—I have very little to add to what Dr. Evans has already said. I was glad to see Dr. Beck's specimen because these endothelial tumors are interesting from the standpoint of the pathologist. As Dr. Evans has said, there is a tendency among pathologists to remove many tumors from the class of endothelioma. I believe that this tumor Dr. Beck has shown is a true endothelioma, as the cells seem to spring from the intima of blood vessels. Such tumors will be called endothelioma so long as the lining cells of blood vessels are called endothe-

lial. It is a question whether tumors arising from the cells lining a serous membrane, as, for instance, the pleura and peritoneum, will be called endothelioma much longer. There is a tendency to consider them as carcinoma, as these lining cells, according to some, should be classified as epithelial. Other so-called endotheliomas of scrous membranes are probably inflammatory in origin. Some time ago I saw a tumor taken from the external auditory meatus, which was strikingly similar to the one shown by Dr. Beck. It was a more typical benign endothelioma in that there was considerable hyaline degeneration of the stroma. I am not familiar with the history of the case, but the tumor had existed for a long time, was perfectly encapsulated and was benign clinically.

Dr. Holinger (closing the discussion):—I wish to thank the members for their interesting discussion. I brought a patient here to-night on whom I did a radical operation for cholesteatoma of the middle ear a year ago, and the result is ideal. Four weeks after operation he was at work again. I am sorry to say that of late not all cases showed such rapid recovery as this one. While at the operation almost all of the membrana tympani was absent, the greater part of it has formed again, and not only has this occurred, but an extension has developed over the aditus ad antrum. You can see it covered by the membrane. This is not the only case in which I have noticed this. As to catarrh of the middle ear, I think Dr. Pierce must have misunderstood what I said in my paper. I do not deny that there is an affection of the Eustachian tube and gathering of secretion in the middle car as a consequence. This disease, its symptomatology and diagnosis, have been described by Professor Bezold years ago. For doing so he had to stand a great number of attacks, because so many men did not want this disease to be known as a separate entity, because it is so often connected with different forms of middle-ear trouble. Bezold says that there are a number of secondary processes, with slight quantities of a watery fluid in the middle ear, which are secondary to affection of the Eustachian tube. The fluid in the middle ear disappears as soon as the affection of the Eustachian tube has disappeared, and if removed by paracentesis returns if the tube is not made patulous. Dr. Pierce spoke of the great amount of work that it took to establish the pathology of spongification. The pathology of the labyrinth and of deaf-mutism required much larger and more careful work. The work on spongification was only preparatory to this work, and very few have any idea what the difficulties to be overcome are in order to get postmortem examinations in cases of deaf-mutes, who usually die in some out-of-the-way place. The German Otological Society, in order to get material for these examinations, has combined to send all the material to one place where it can be examined. Siebenmann worked independently and has secured much more material. Dr. Coleman spoke about therapy. It is true that it has not been very efficient, but I believe it will be as soon as we are able to make accurate diagnoses. In acute neuritis of the acoustic nerve there certainly ought to be some hope for results, particularly if we instruct these patients to remain away from noisy places. What do we'do in a case of neuritis involving the leg? We do not massage the leg, but we wait until the acute stage has passed, giving the leg as much rest as possible. As long as the nerve is infiltrated with round cells you can not expect improvement from any active treatment. I am not very well informed as to the treatment of cases of optic atrophy, but surely you would not encourage patients with optic atrophy to expose themselves to strong light. Rest is the main indication. For the ear this means absence of noise. As to the remarks of Dr. Beck in regard to the cases of syphilis, I made a diagnosis of syphilis because the tuning-fork examinations did not fit in any of the typical schemata. The cases where the diagnosis of nerve deafness is clear are very frequent.

On motion, the society adjourned.

A regular meeting was held November 22, with the president, Dr. Charles S. Bacon, in the chair. The subject for the evening was a symposium on "The Treatment of Fractures." Papers were read as follows: 1. "Fracture of the Femur

Treated by the Ambulatory Method," by Dr. R. S. Dubs. 2. "The X-ray as an Aid in the Diagnosis and Treatment of Fractures," by Dr. Joseph F. Smith. 3. "The Use of Molded Plaster-of-Paris Splints," by Dr. H. B. Kirtley. These three papers were discussed by Drs. David J. Doherty, Max Reichmann, Daniel N. Eisendrath, Charles Davison, William Fuller, Edward H. Ochsner, Richard M. Fletcher, A. B. Hosmer, Edwin W. Ryerson, R. S. Dubs and Joseph Smith. Adjourned.

THE ROENTGEN RAYS IN THE DIAGNOSIS AND TREATMENT OF FRACTURES.

JOSEPH F. SMITH, M.D.

The introduction of Röntgen rays into the study of fractures has been of such epoch-making importance as to justify consideration, somewhat in detail, of the directions in which our knowledge has been materially increased. The Röntgen method has given us much new information and corrected many old conceptions, especially in the following lines:

- 1. The Pathologic Anatomy. Many of the older classifications of fractures have been shown to be erroneous and new forms and variations have been definitely established. Some of the forms either described as rare or not described at all-as, for instance, fracture of the styloid process in Colle's fracture or fractures of carpal or metacarpal bones—are shown by the employment of x-rays to be of common occurrence. Many injuries formerly described as sprains, especially those occurring about the anklejoint, can now be demonstrated to be fractures of the tips of one or both malleoli. On the other hand, some of the classic forms described in the textbooks are shown to be of rare occurrence and many injuries heretofore recognized as dislocations can now be shown to be dislocations complicated by fractures. This condition is frequently found in the injuries invading the shoulder and elbow-joint. The exact determination of the finer structure of fractures can not be made out by any other method of investigation with any degree of certainty comparable to that obtained by the use of x-rays. The direction of lines of fracture, the degree of comminution, the number and size of loose fragments can not be determined with any degree of certainty by the older methods, even by the most skillful surgeons. The use of x-rays enables us to study the gross pathologic anatomy of the bones in the living patient immediately after injury. The advantages of this method of study over the study of postmortem specimens obtained years after the injury has healed, or by the dissection of injuries produced artificially upon cadavers, must be apparent to all.
- 2. Diagnosis. The Röntgen method offers us a means of obtaining exact and accurate information concerning the number, direction and character of fractures as well as the exact relative location and position of the fragments without the necessity of painful and harmful additional trauma from manipulation or the dangers of anesthesia. Under anesthesia and with any amount of manipulation the greatest mistakes are often made, even by those who have had extensive experience in dealing with these lesions. The skiagraphs furnish a series of permanent records of the exact conditions present in actual fractures produced in the ordinary manner upon living patients. A collection of some hundreds of such plates from the larger hospitals treating large numbers of fractures will furnish the most reliable statistics from which to determine the relative frequency of fractures of different bones, and a series of lantern slides made from such a collection of plates would be of the greatest value to the teaching of this subject to students and practitioners.
- 3 So-called Fallacies of the Röntgen Method. It is well known that the x-rays produced by a vacuum tube spread in all directions from a point on the anticathode. Since the distance at which we are able to utilize the rays for practical purposes is not more than a few feet at most, it happens that practically none of the rays are parallel, as are the rays from the sun or some distant luminous

body. This fact makes possible the production of distorted images by placing the object in the outer portion of the field of illumination, by placing the tube too near the object or by placing the plate at an angle with the anticathode, as shown by Codman's drawings I and II in Scudder's "Fractures and Dislocations." When, however, the tube is placed at a distance of two or three feet and the object is brought near the plate, which is placed at a right angle to a perpendicular from the luminous point on the anticathode, the element of distortion is removed and the image upon the plate represents the exact condition present. the early days of the x-ray, when tubes of poor penetration were used, it was necessary to place the tube very near the object in order to secure a sufficient penetration. This resulted in great distortion in the size and location of objects within the field of illumination. Some surgeons, who have not followed the developments of the Röntgen method, still insist that the x-ray "lies" when they look at the skiagraph of a fracture after they have reduced it and find extensive overlapping, marked angularity at the seat of fracture or wide separation of the fragments. This consolation can be theirs no longer. The accuracy of the skiagraph taken by the present improved methods is not a matter of surgical opinion, but a scientific and demonstrable fact, and the sooner medical men come to realize that the skiagraph is capable of demonstrating the exact condition present without making any allowance for "exaggeration," as they call it, the better will they handle their fracture cases.

- 4. Treatment of Fractures. The x-ray is of great value in the treatment of fractures, not as a therapeutic agent, but as a means of ascertaining the perfection with which reduction has been accomplished and the extent to which it is maintained by the appliances in use. After a plaster cast has been applied or extension apparatus put on, the exact position and relation of the fragments can be ascertained by means of a skiagraph taken with the dressings in place, without pain or inconvenience to the patient and without disturbing the dressings. Thus the surgeon has a check upon his method instead of working in the dark and trusting to luck that reduction has been accomplished and maintained. In complicated and eomminuted fractures it is possible to ascertain the extent of the comminution and to determine from the size and location of the fragments the possibility of wiring or otherwise approximating the fractured surfaces.
- 5. Special Fractures. The fractures of the long bones are most easily demonstrated accurately by the x-ray. However, by means of plates taken in two or more directions fractures of many of the short bones, such as those of the carpus and tarsus, may be easily demonstrated. Fractures of the pelvis are more difficult because of the fact that in most positions we have the shadow of one side superimposed upon the shadow of the other. In some instances when there is a slight displacement the condition is readily demonstrated. In a fair percentage of cases one will be able to demonstrate satisfactorily either the line of fracture, the extent of displacement, or both, in fractures of the bony pelvis. Fractures of the bones of the face and skull are more difficult of demonstration, and except in cases where there is considerable depression or displacement the x-ray will not be of great help because of the difficulty of getting only one side. Fractures of the spine will be demonstrable in a fair percentage of cases either by a line of fracture more or less irregular, a splitting and shortening of the bodies of the vertebræ or a slight displacement with moderate angular deformity. In the injuries of the shoulders and elbows we have to deal in a large percentage of cases with complicated conditions, consisting of a combination of more or less extensive fractures, with complete or partial dislocation. It is in these injuries that, with the ordinary means of diagnosis, the surgeon is working in the dark, and that the exact condition with which he has to deal can be so perfectly demonstrated by means of the x-ray. In children the difficulty of making a differential diagnosis between fracture and epiphyseal separation frequently presents itself, especially in injuries involving the wrist, elbow, shoulder, hip and knee. In these cases before the epiphysis has united with the shaft the skiagraph will show a more or less complete separation between epiphysis and shaft, owing to the fact that

cartilage casts a relatively faint shadow, and the mistake of diagnosing a separation of the epiphysis in a normal joint is easily made. It is only by securing skiagraphs of the injured joint in at least two directions and making earcful comparisons with corresponding skiagraphs of the same joint on the opposite side and noting the relative degree of separation and dislocation that a correct diagnosis can be made.

Discussion on the papers of Drs. R. S. Dubs, Joseph F. Smith and H. B. Kirtley.

Dr. David J. Doherty: The case I desire to report is that of a woman, 68 years of age, frail, poor in circulation and quite delicate. In getting off of a street car she fell and injured her hip. For two weeks she was under the impression that it was simply a contusion and she walked around. When I saw her I was able to determine that there was a fracture at the hip-joint, and while I did not attempt to diagnose whether it was intra- or extra-capsular, I knew it was a fracture at the hip. I read up about Buck's extension splint, Smith's anterior splint, Senn's metal splint incorporated in plaster-of-paris with a screw attachment for lateral pressure, etc. I then went to the instrument houses to select an apparatus and there saw the ambulatory pneumatic splint. I looked at it and said to myself, Perhaps that is the thing I need, because I fear, above all things, in an aged woman, hypostatic pneumonia, bed-sores, the weakness that comes from long reeumbency, together with the worry and nursing that are necessary in such cases. I had one of these splints taken to the patient's house and applied it. She wore it for six weeks; that was not long enough, but I think I got a good result—perhaps not osseous union, but fibrous union. The woman goes around with crutches yet, because she is generally feeble and has had two or three intercurrent sicknesses, bilious attacks and so on. On the whole I was well satisfied with this treatment. The chief advantage was to put the woman on her feet daily, so that she could support herself standing, and in that way we got an improved circulation and thereby overcame the danger of hypostatic pneumonia and bed sores. It seems to me that this splint ought to be known to the doctors, and I have asked Mr. Seamann to bring one here this evening and demonstrate it to those who desire to know more about it. It is more than a splint, because it accomplishes both reduction and retention. I was surprised at the ease with which we were able to reduce the fracture, which is done by a screw arrangement, without really hurting the patient. This splint holds the limb immobilized. It permits us to massage the limb, to inspect it, wash it, etc. It did not need, as plaster-of-paris often needs, any readjustment. To be sure, there is pressure even with the rubber air-cushions, but the pressure can be regulated without any risk of displacing the fracture ends. The circulation and the excretory functions of the skin are not much interfered with. The chief advantage of this splint is that the patient can be lifted to his feet, so as to rest in the erect position, and if vigorous he may even walk by the aid of crutches. I might add that the splint may be used in other troubles requiring extension, such as tuberculosis of the joint, etc. Perhaps some improvements may be made in it; for example, a screw device such as Dr. Senn uses to make lateral pressure against the trochanter, and a corset instead of belts around the thorax.

My patient had a fracture at the hip, and therefore needed the attachment which goes with this splint, namely, a steel rod that runs up nearly to the axilla and is fastened around the thorax with belts. The patient complained considerably of the belts because they would overlap and pinch the skin. I have suggested to Mr. Seamann other kinds of straps. I understand that Dr. Murphy has also suggested that, instead of a solid, rigid rod, a hinge should be made near the hip.

My experience with the splint has been very satisfactory, and if I should be unfortunate enough to break my thigh-bone at any time I would want the surgeon to use such a splint as this in my case.

Dr. Max Reichmann: Dr. Smith has shown you skiagrams of fractures and has spoken of the value of the x-ray in this work. With the permission of the president I am able to show you two Rôntgenograms taken from patients who sus-

tained fractures which were not properly recognized, although the facilities for making fluoroscopic examination were present. The first negative I show you is that from a patient who was injured in a street-car accident. He was brought to one of the hospitals in town with the bone sticking out at the elbow. The supposed fracture was reduced, a plaster-of-paris cast was applied, allowed to remain for six weeks, after which it was removed, and the patient's arm subjected to passive and active motion, but with no result. He came to my laboratory, being under the care of a surgeon, and after having taken two pictures of the elbow, as I usually do, I made a fluoroscopic examination and was much surprised to find no injury to the elbow, but an ununited fracture of the lower third of the humerus, which you can see. There is absolutely nothing abnormal about the elbow, but a fracture of the humerus plainly seen. One Röntgenogram gives us an antero-posterior view, the other a lateral view, of the same case.

A patient was brought to this city from Alabama to my laboratory who fell, in the early spring of this year, from a ladder, a distance of thirty feet, on to the ground. He received several injuries, but the attending physician overlooked some injury he sustained to his elbow, and the Rôntgenogram I show discloses a complete fracture of the olecranon. It is a lateral view. The same man had a fracture of the femur. There are two overlapping fragments in the middle of the femur to be seen, besides splintering.

These Röntgenograms, and I have more in my laboratory, will suffice to show the importance of Röntgenography and Röntgenoscopy in fractures, and by giving attention to this subject the physician can save himself and the patient lots of trouble and perhaps himself a suit for damages.

Dr. Daniel N. Eisendrath: - I was much interested in the presentation of the ambulatory pneumatic splint by Dr. Dubs and the report of the clinical case by Dr. Doherty. Personally, I have had no experience with this splint, so that I am unable to say anything in regard to this particular variety. My experience has been limited to two varieties of splints, one of which is the Thomas-Ridlon hip splint, which combines many of the properties of the ambulatory splint, and has some advantages over it. It is especially adapted to the treatment of fractures of the neck of the femur in elderly people or in people who are stout, and to whom it would be a great hardship to be confined to bed. I have used this splint a number of times with excellent results. At the Cook County Hospital, where we have a large number of these cases to treat, the Thomas-Ridlon splint can not be used on account of its expense. We have been in the habit of using a splint known as the Kuflewskis splint, which, for all practical purposes, is as useful an ambulatory splint in fractures of the shaft and neck of the femur as I know of. It consists of a steel bar, which is placed along the outer surface of the limb and curves around it at right angles below the sole of the foot. The bar extends upward almost as far as the axilla, and has all the properties of the long external Hamilton splint and combines with it the advantages of extension. The adhesive strips are placed along the limb in the usual manner, and, while traction is being made, the adhesive strips are curved around the rectangular piece; at the same time traction is being made the plaster-of-paris cast is applied to the limb and encircles the body. I have treated a number of cases in this way and the results have been ideal.

Dr. Smith, in his paper, brought out several interesting points, one of which is the distortion of the images. Having the x-ray plate in a rectangular line to the point where the x-rays emerge is undoubtedly the solution of the whole question. A great number of the skiagraphs do not so much exaggerate the fracture itself as they exaggerate in the minds of the patients and in our minds the bad deformity; whereas by palpation we can scarcely feel anything. This is a picture of a fracture of the humerus, and is interesting because it shows why it is difficult to reduce many of the cases. It shows a typical denudation, so that when we try to make traction on the fracture it prevents us from getting the fragments end to end, for the reason that the serrations of the lower fragment do not fit into the teeth of the upper one. This patient refused to take an anesthetic;

we had an x-ray picture made; she would not permit more than ordinary traction, so that it was simply impossible to reduce it, and I feared, as a consequence, a poor result, but externally there was not the least bit of this deformity to be felt. The patient is 20 years of age. Fortunately, we seeured excellent union in this case, only it took seven instead of four weeks.

Another point Dr. Smith brought out, and one which, I think, we are apt to overlook, is the study of normal x-rays. I hope the time will come when systematie x-ray photographs will be made at all ages. This is done in Germany. They make a systematic study of x-ray photographs of the extremities, beginning with children at the age of 2 or 3 months and continuing up to the time when ossification is complete. There may be a lack of ossification in some bones, and of the epiphyseal eartilages in other cases, as pointed out by Dr. Smith. Not only should we study photographs at all ages, but in all positions. If a pieture is taken with a joint in the position of flexion, it is quite different from a picture taken at a different angle. In cases of fractures of the elbow or of the wrist joint, or in fractures in close proximity to joints, we need not wait to determine the actual amount of displacement by palpation. If the patient can not be transported, we can take a picture at the place of residence, provided the circumstances permit, or if, after the patient is taken to a hospital, we can take an x-ray there and find out exactly the amount of displacement frequently within an hour after the occurrence of the fracture.

The use of molded plaster-of-paris splints has rendered our treatment of fractures at the Cook County Hospital very much easier than before. We have, on an average, between 75 and 100 cases of fracture under treatment, and if we used tin or wooden splints I doubt whether we would get as good results as we obtain there to-day from the use of molded plaster-of-paris splints. This subject was brought to the attention of the society some years ago by the late Dr. Edward L. Lee. These splints are so easily made that every general practitioner ought to know how to make them. They are useful in the treatment of fractures of the upper extremity. I wish to call attention to a point that the general practitioner too frequently overlooks, and that is the diagnosis of pathologic fractures. Every now and then we get a case of fracture that has been treated in vain from four to six weeks without union having occurred, and the thought has never occurred to us that this might be a pathologic fracture, that is, a fracture occurring in a patient previously operated on for a malignant tumor, as recently happened at the Cook County Hospital, where a patient had been treated for some weeks for a supracondyloid fracture occurring in locomotor ataxia, without union having taken place. When we run across such cases, it is well enough for us to remember their existence and the possibility of non-union. Shortly after that the patient was treated with iodid of potassium, when callus

formed and healing took place.

This photograph was taken of a woman, 70 years of age, who, in stepping out of a carriage, made the slightest misstep, and has since been unable to use her limb. There was not much false point of motion to be felt in the femur, but, knowing the previous history and that she had been operated on two years before for a tumor of the breast, I had an x-ray made and it shows a fracture. In this case there was a carcinomatous metastasis. These things happen many times when the primary carcinoma is insignificant.

The last point I wish to speak of is the use of massage and passive motion in the treatment of fractures. Frequently, in a case of fracture, a splint is put on, and if good union has taken place, or we think it has, the patient is left alone and nothing further is done for him. It seems to him, when we treat a fracture in which union has taken place in close relation to a joint, if the patient can afford it, he ought to be put into the hands of a professional masseur, who will massage the joint to get rid of the exudate, and begin to make passive motion in mild manner and get the patient accustomed to some form of apparatus. The form of apparatus I use for fractures is one I presented to the society some years ago, and one with which I have never failed to get good results. Instead of having children ery every time I make passive motion, they learn to use this appa-

ratus themselves. Patients begin to exercise in cases of dislocations at the end of three weeks, and in fractures involving the shoulder joint at the end of four weeks.

Dr. Charles Davison: With reference to what has been said regarding splints, almost any kind of splint, if earefully applied and intelligently watched, will give good results. The result in the ease of Dr. Dubs by the pneumatic ambulatory splint is good. These results are undoubtedly as good as those that are obtained by any splint. But any of the recognized practical splints in the hands of such men, earefully applied and intelligently looked after, will bring about the same results. I am not an enthusiast over the matter of ambulatory splints. I think they have their place in the treatment of fractures, but that place is limited. In fractures of the femur, it is limited to those cases which are required to be gotten out of bed at once because of other complications. For instance, in old people it is necessary to get them out of bed as soon as possible, on account ot hypostatic pneumonia or the development of bcd-sores. It is applicable to any fracture of the femur if union has progressed far enough so that the fragments will not separate or so that the ease does not require further extension. In the first two weeks of a fracture, unless there is some contraindication, in all probability the ambulatory splint can be used; but we can not fix these eases so closely as by a splint with which they can have rest in bed. A patient with a fracture needs immobilization and rest of the fracture. They need rest for the circulation of the parts to re-establish itself, and when union is far enough advanced so that the ends will stick together when a little force is applied, then the ambulatory splint is indicated, say four weeks from the time of the fracture. Any one of these splints is good. If a patient ean not afford an expensive splint, the Kuflewski splint is a good thing. It will hold the fragments in perfect apposition after they once begin to unite. If it is applied at the beginning of a fracture, you get a certain amount of motion, more callus, and more of the later results of fractures. The ambulatory pneumatic splint is all right under these circumstances; it is a little clumsy, but fills the indications. I do not think it fills the indications in holding a fresh fracture in the place it should unless the patient is put to bed. The Thomas-Ridlon splint does the same work. All these splints are applicable practically to the same conditions.

As to the value of the x-ray, it should be the routine work of every surgeon who treats fractures to use x-ray pictures, as a matter of record, taken in two directions before reduction, and a picture of the same fracture to be taken after reduction, as soon after it is put up in the splint as practicable. In regard to molded plaster-of-paris splints, I believe they are as ideal, so far as they go, as any splints we have to deal with. They fill so many indications; they can be molded accurately and easily; but they are limited in application. For fractures of the humerus and injuries of the elbow they are ideal; they can be molded to the parts. You can get extension in fracture of the humerus, and hold it in the position you want better than by any other variety of splint we have. Where the fracture is below the elbow, these splints should not be used. Any surgeon who makes it a routine to use molded splints for fractures of the arm is going to meet his Waterloo sooner or later. They are indicated in fractures of the bones of the thigh only for suspension. They are ideal splints for fractures of the lower part of the extremities, below the knees. They fill every indication. The trouble is it takes a good deal of work to make one of these splints properly, and few surgeons will spend the time or the effort required to make such a splint. The Bayarian splint, as seen to-night, ean be fitted with hooks like the front of a shoe, so that it can be laced up; it can be applied quickly; it can be covered with shellac on the outside, so that the plaster will not come off and soil the clothing. It ean be fixed up nicely and neatly, so that patients will appreciate it.

These molded splints, so far as their application goes. I believe are going to be the splints of the future not only for hospital use, but for general practitioners, because they are easily made and fill every indication for the treatment of fracture of the leg.

Dr. William Fuller:—I am sure that we have all been much interested this

evening with reference to the many good points brought out in the diagnosis and treatment of fractures. It would seem now that about all that is necessary in a given case is to skiagraph the fracture, apply some form of splint and expect a good result. I feel certain that, if this and nothing more is done, in many cases, we will have no room to feel much disappointed. The class of cases which has always interested me is the unopen or closed fractures that present difficulties in or obstacles to reduction. I believe that we will meet with many of these cases that can not be managed with any form of splint we have heard described tonight. In such cases, the x-ray may show the nature of the fracture, but will not remove the obstacle to replacing the bone ends; and it seems to me that the way to best deal with these cases is by operating on them. By the operation we can get a perfect knowledge of the fracture, can remove all the effused blood, control further bleeding, and prevent thereby subsequent swelling of the extremity; torn muscle and fascia ean be removed from between the bone ends, and enable the surgeon to easily replace the fracture, in which position the simplest splint will often hold it. The operation permits wiring the fracture if deemed advisable, and the prevention of swelling of the limb, as above intimated, will justify a more snugly fitting splint, which insures a more perfect fixation of the bone fragments.

Dr. Edward H. Ochsner: - Dr. Davison has so completely expressed the views I hold in reference to the use of the pneumatic splint that there is very little that I can add to what he has said. I have used the splint five times in fractures of the femur, and have found it very satisfactory. In reference to the use of the x-ray, I am very glad to hear that x-ray pictures can be satisfactorily taken through plaster-of-paris dressings. Four or five years ago I tried three times, and the results were so discouraging that I regarded it as useless. I shall again try x-ray examinations made while plaster-of-paris dressings are in place because I think it is one of the most valuable uses of the x-ray, if satisfactory results can be obtained. In reference to molded splints, I would like to make this observation: Dr. Davison brought out the point of putting on one stocking. If one stocking is good, two are better, for then the point of friction comes between the two stockings, and the amount of annoyance saved the patient is quite marked. In reference to the molded splints that have been passed around this evening, I would like to observe that they are much too heavy. All of them are far from satisfactory. If one will incorporate in the plaster of paris wooden splints and cover the plaster subsequently with gluten bandages, the splints can be made just as strong with one-half the weight, and to patients who have to run up and down stairs, as many of these leg cases have to, it makes quite a difference whether he carries four or two pounds. I have repeatedly taken off a leg and thigh cast made in the manner above described which has been worn for six months and which did not weigh more than two pounds.

I desire to eall attention to a method of treating compound fractures which was taught me by Dr. Crouse, of El Paso, Texas, a year ago. It consists in protecting the plaster-of-paris against soiling by the application of a mixture of dental rubber, dissolved in chloroform, to about the consistency of ordinary mucilage, into which small pieces of lamb's wool or cotton are placed. A little space is left between the limb and plaster-of-paris bandage, and this space is filled in by this mixture. By doing this a compound fracture wound can be dressed and, if necessary, irrigated daily, and the dressing left in place eight to twelve weeks without the slightest soiling of the plaster material taking place.

I take issue with Dr. Eisendrath in recommending passive motion in fractures near joints. There may be exceptional cases in which that is indicated, but I have yet to see a case in which I would advise it. In my mind, in nine cases out of ten in which it is applied it is a form of barbarism and inhumanity to patients. A patient will ask you whether if the cast is left on so long it may not cause ankylosis of the joint. If it is not left on long enough, it may cause ankylosis of the joint; I have never seen a joint ankylosed by the plaster-of-paris cast being left too long in position. I have seen a number of cases where the removal of the cast too early was the cause of a painful, tender, rigid joint. If plaster of paris

is left on long enough, until complete healing has taken place, mobility of the joint is the rule, unless there is a fracture into the joint, with a resultant spicule extending from one bone to the other, which can not be prevented by any form of passive motion. My method has been, where a fracture is near a joint, to leave the cast on especially long, and then depend on some form of active motion, as Dr. Eisendrath has illustrated, in securing good motion, and not on painful methods of passive motion.

Dr. Edwin W. Ryerson:-There is nothing original about this ambulatory pneumatic splint. It is gotten up for commercial purposes, and I question very much whether remarks on the value of this splint in a discussion should be published in the proceedings of this society. Any one who can measure from the tuberosity of the ischium to the sole of the foot can have a splint made for onehalf the price that this splint costs, which will do the same work and do it as effectively as this commercial splint will. The author of the first paper, in speaking of fractures of the femur, quoted from Scudder's text-book, and he reports a number of cases of fracture in which stiffness of the knee was the only symptom and only disability complained of long after the patients were well from their original fractures. It is my conviction that every case of fracture of the neck of the femur in an old person should be turned over on the face, at least two or three times a week, and the knee passively bent to the extreme limit of dexion. This should be done regularly as long as the patient is having traction or immobilization of the knee. In children, immobilization can be practiced up to two or three years, as in cases of tuberculosis of the hip or knee joint. In old people it is a different proposition. They will get stiff knees in a short time, and you may be compelled to anesthetize them and break up the adhesions or break up the stiffness of the muscles. By prevention you will get the confidence of your patients and afford them very much comfort. With reference to operating on closed fractures, unless it is absolutely imperative I am unalterably opposed to it. I regard it as meddlesome surgery, unless the indications warrant it. With regard to wiring bones in any part of the body, I think chromicized catgut will answer every need, and it is not open to the objection of silver wire, which often has to come out afterward on account of causing trouble. In using silver wire, we are putting a foreign body in a place where it ought not to be.

Dr. Dubs | closing the discussion on his part | :- I have very little to add to what I have already said, except to remark that, in recommending the ambulatory pneumatic splint. I spoke of its use by the general practitioner, not by surgeons, believing that it is a good thing. I did not speak of its use by men who are connected with hospitals, who have the necessary paraphernalia at hand, who have skilled assistants who can make plaster-of-paris splints for cases of fracture of the femur, and make them well. The general practitioner, if he gets two or three cases of fracture of the femur in a year, is getting quite a number. When he is called to see a case of fracture in a family, he has nothing perhaps except what he advises and devises. He may adopt and apply a form of splint which he thinks will bring about a good result. The patient, however, is almost wholly beyond his control, save as far as the laity can understand and appreciate the doctor's directions. As general practitioners, we can not compare our work in the treatment of fractures with that of the surgeon who is constantly treating these cases. Take the results which surgeons obtain in hospitals and those which The obtain in general practice and we can not compare the two sets of statistics, as the conditions are so different.

With reference to the remarks of Dr. Ryerson, I will simply say that I quoted the statistics of Scudder as he gives them in his last edition. I did not add anything to them nor explain anything from them. I thought the figures were just. If we take some of the statistics as reported in von Bergmann's Archiv für Chirurgie, we will find that in 75 per cent. of the cases of fractures of the femur the treatment is unsatisfactory. I am satisfied with the result I obtained in this case by the use of the ambulatory pneumatic splint. I have nothing to do with the manufacture of this splint, any more than I have with the Thomas, the Thomas-Riddon, or the Taylor splint. It was highly recommended, I used it, and

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SOUTHERN DISTRICT SOCIETY.

The Southern District Society of the Chicago Medical Society held its monthly meeting October 19. The program was as follows: 1. Exhibition of a case of Interstitial Keratitis, Dr. George F. Sutter. 2. "Empyema," Charles J. Drueck. 3. Report of a Case of Absence of the Uterus with Vicarious Menstruation, Robert T. Gillmore.

There were thirty-five members present. The society met at the Vendome Hotel.

W. S. Harpole, Secretary.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held Dec. 5, I905, with the president, Dr. William Lincoln Ballenger, in the chair. The following papers were read and discussed: Hypertrophic Laryngeal Tuberculosis, by John Edwin Rhodes; Vicarious Bleeding from the External Auditory Meatus, by Dr. George E. Shambaugh; Nasal Operation Followed by Death, by Dr. Stein.

DISCUSSION ON DR. RHODES' PAPER.

Dr. Otto T. Freer:-The sections in Dr. Rhodes' case had necessarily to be made from a small piece of excised tissue; nevertheless, they clearly showed the characteristics mentioned of a tubercular process leading rather to connective tissue hypertrophy and resistance on the part of the invaded tissues than to their disintegration. Probably in this case the bacilli are either of slight virulence or. more likely, the susceptibility of the individual to tuberculosis is slight and his resistance great, so that his laryngeal structures respond by hyperplasia rather than by disintegration to the advance of the tubercle bacilli. The laryngoscopic image was deceptive. When I first saw the patient it was impossible to make a diagnosis, a thing that is very rare in tubercular laryngitis where the appearances are usually quite characteristic. A distinction should be made between tubereular hyperplasia as shown in this case and the common characteristic chronic inflammatory edema of tubercular laryngitis. The latter has a smooth gelatinous appearance, while the surface of the tubercular hyperplastic tissue is nodular and warty. The verrucous masses seen on the cords and ventricular bands in Dr. Rhodes' case are analogous to the larger collections of tubercular new growth occasionally seen in the form of a tubercular tumor or tuberculoma.

Dr. William E. Casselberry:—I note especially in this report the statement of a well-demonstrated case of laryngeal tuberculosis without evidence of pulmonary involvement. There are many cases in which that statement has been made, but in which, on further thorough examination or repeated tests, it subsequently evolved that there was a focus in the lungs, or in a short time after such examinations such a focus developed, indicating that it had been there previously, though undiscovered. Doubtless the pulmonary focus may be quite limited and of the "latent" or slowly progressive type, as in a case recently long under my observation—a woman, 50 years of age, who had also tuberculosis of the larynx of the distinctly hypertrophic form as described by the essayist. In a somewhat extended experience with tuberculosis of the larynx I have yet to be satisfied that it really exists unassociated with pulmonary tuberculosis, so I believe it to be important that such reports should be amplified and emphasized in a more convincing way as to whether there is or is not tuberculosis of the larynx. course, this case is not presented, I understand, as one of actual primary tuberculosis of the larynx, but, as we are accustomed to view tuberculosis of the larynx. as being secondary to tse pulmonary disease. If it really does occur secondary to some other focus far removed, as in the knee joint of this case, it assumes almost as much interest and novelty as if it were actually primary in the larynx.

Regarding the hypertrophic type of tuberculosis of the larynx I can not feel that it is as infrequent as the paucity of literature would indicate. Inasmuch as some degree of hyperplasia is common to all cases, in conjunction with ulceration, the cases in which the element of hyperplasia reaches extreme limits, ulceration, being deferred, would seem to present a variation in degree rather than of kind. However, they are seemingly of a less virulent nature and hence of slower course. Regarding treatment, I am convinced that much benefit is derived in cases of

laryngeal tuberculosis from an outdoor lite and superalimentation. I have seen them in Colorado, California, Texas, and Arizoua often continue to live for years in a state of comparative comfort. The stimulating influence on tissue metabolism has a favorable effect on the larynx, although perhaps less than on pulmonary disease alone. I formerly subjected these patients to currettement, aiming to excise the tuberculous deposits, as far as I could, but never was satisfied that I did aught but ill to my patients, unless it was a well-circumscribed lesion, which could be unade the point of attack. Local treatment, when designed to palliate exhausting symptoms, is valuable.

Dr. E. Fletcher Ingals:—My experience has been something like that of the last speaker with reference to treatment. The results, I think, are practically always dependent on the condition in the lung, as foci in these two locations nearly always go together. Usually anything that will improve the pulmonary condition will likewise improve the laryngeal trouble, and, while local treatment of the larynx apparently helps a considerable number of the cases, I doubt very much whether the majority get any real benefit from it. The suggestion made by the author as to laryngo fissure in this case, for the removal of the tubercular tissue, seems to me a little radical. I was unable to see the case perfectly on account of not having proper glasses with me, but I understand that the ventricular bands ou both sides are involved, that the posterior commissures and the arytenoids are affected, and that there is also involvement of the epiglottis. If this is the case, it would require removal of the larynx to get rid of the tubercular tissue. I can hardly conceive of a case of laryngeal tuberculosis in which this operation would appear to me likely to improve the patient's chances.

In my observation of the more radical forms of treatment mentioned by the last speaker, as a rule, patients are not benefited by them; and, as nearly all patients with laryngeal tuberculosis have diseased foci in other organs, I can see no reason for expecting much improvement from removing more or less tissue from this particular locality. I think the conservative treatment of tubercular laryngitis, with forced feeding and good hygienic conditions, is likely to accomplish much more than any other method. I have for years used in many of these cases terchloride of iodiu as a spray, with apparent benefit; but I have at the same time given the patient the symptomatic constitutional treatment indicated for pulmonary tuberculosis.

I have seen one or two cases that appeared to be primary tuberculosis of the larvnx, in which I could not discover any involvement of the lungs.

Dr. F. G. Stubbs:-Dr. Casselberry's remarks remind me of a case which I brought before the society last February. I presented the patient because apparently it was a case of primary tuberculosis of the larynx, and I called attention to the fact that I would make a further report. She first came under my observation a year ago last month; hence, it is about thirteen months since I first saw her, at which time a thorough examination of the lungs failed to reveal anything that I could determine was pathologic. I have examined the lungs many times since, the last time about three weeks ago, and at that time the lungs were apparently as clear as they were at the first examination. She had lost weight from about 112 to 115 to 97 pounds when I first saw her, on account of pain in swallowing interfering with her ability to eat. After the pain was relieved, she rapidly improved and not only regained her former weight, but went up to 118 pounds. The condition presented in the larynx was apparently an hypertrophied condition or granuloma of the ventricular bands of both sides. This I removed and the parts apparently healed perfectly. She went along for three or four months, until about August, when apparently the tubereular process began to affect the right vocal cord, and a condition of granuloma presented itself there, which has recently shown signs of breaking down. Up to this time her health has been perfect. There is no history of tuberculosis in the family, and, on account of the fact that her general condition is so good, and the tendency toward a rapid breaking down of this granuloma, I have had under consideration advising her to have a thyrotomy done for the removal of the parts affected. As to the question of sending her to a different elimate, her general condition seems to be

so good in this climate that it is doubtful whether other climatic conditions would make any difference in her case.

Dr. J. Holinger:—I want to offer a suggestion for the treatment of Dr. Rhodes' case. I have treated a great number of cases of tubercular laryngitis at St. Anne's Hospital with ignipuncture, using a galvano-cautery, with three to six little points. This method of treatment has given great satisfaction, and I would suggest that Dr. Rhodes try it in this case. It is not disagreeable. After you have cocainized the larynx with a 10 per cent. and then with a 20 per cent. solution, it is easy; 'let the cautery burn about three millimeters into the tissues. The reaction is very slight, and the treatment gives almost no discomfort to the patient. After two weeks he will see the tubercular points disappear, a scar forms, and the whole part shrinks.

Dr. Rhodes (closing the discussion):—In the presentation of this case it was far from my intention to report it as one of primary tuberculosis of the larynx. I am familiar with the almost endless discussion as to whether there is such a thing as primary tuberculosis of the larynx. This subject has been reviewed time and again. I presented this case as a somewhat rare form of tubercular laryngitis—the hypertrophic form without ulceration. Whether or not the lungs are involved at the present time, or will be implicated in the future, is a question that time only will settle. I have made repeated examinations and have not been able to make out any disease of the lungs at all, although it is quite possible that they are already the seat of an infiltration that can not yet be demonstrated by physical examination. Notwithstanding the statement made by Dr. Casselberry that it is a common form, I am obliged to differ with him, and would refer again to Theisen's enumeration of cases, in which he gives twenty references, of a pure hypertrophic condition of tuberculosis of the larynx. The common form of tubercular laryngitis is frequent and easily diagnosed, but cases of the purely hyperplastic variety, with little systemic disturbance, are rare, and I present this case as such.

DISCUSSION ON DR. SHAMBAUGH'S PAPER.

Dr. J. Holinger:—Dr. Shambaugh mentioned that potassium iodid in his case had some influence on the tumor. I have at present a patient at the Alexian Brothers' Hospital who was admitted with two swellings quite deep in the external auditory canal. One swelling was posterior and the other was situated at the lower wall and covering a large part of the membrane. I employed the usual treatment in these cases, putting in a tampon of iodoform, expecting the swelling would simply disappear, because I thought it was a furuncle. The pain disappeared, but the swellings remained, or have only diminished slightly in size. The other day I pressed on it, and it had the distinct feel of rubber under a probe. This made me think that this tumor probably was a gumma. I gave orders to have the patient examined very carefully. Chancre and syphilis were admitted, and, under the influence of iodid, these tumors or swellings have gradually decreased in size.

Dr. Joseph C. Beck:—I would like to ask Dr. Shambaugh how large a dose of iodid of potassium was given in his case?

Dr. Shambaugh:—The dose was increased until she was taking about 60 minims two or three times a day. She kept that up for five or six weeks.

Dr. Beck:—That disproves the remarks of the previous speaker so far as antisyphilitic treatment is concerned. At a recent meeting of the Chicago Medical Society I presented a case of angio-endothelioma of the middle ear. This case presented very much the appearance, when I first saw her, as Dr. Shambaugh's case which he has exhibited this evening. It is a bleeding tumor, and, as I have not removed any of the growth, no one can say what the nature of it is. The tumor, however, is of a suspicious nature. In one part of the history of his case, Dr. Shambaugh speaks of furunculosis, and he refers to the influence exerted by iodid of potassium on it. It is possible there is a small necrosis at the bottom of the granuloma that is present in this case, which gives the appearance that there is granulation underneath the layer of the epidermis, and doubtless on the out-

side; that is, the surface that points to the posterior part of the canal looks like a protruding granulation. I believe it is simply a case of granuloma leading from a small fistula, such as we see in the superior part of the eanal. I would suggest that this growth be thoroughly removed and the necrotic area exposed, and if there is a little plate of bone there to remove that through the external auditory eanal.

Dr. Shambaugh:—Would you expect that sort of fistula in the absence of any middle-ear disease?

Dr. Beck:—Yes, sir. These are the cases of suppuration without perforation of the tympanic cavity. Dr. Allport, of this city, reported three such cases four or five years ago, of suppuration without perforation, and of finding a fistula in the upper posterior part of the canal.

Dr. Shambaugh:—In my case it comes from the anterior part of the canal.

Dr. Beck:—This may be necrosis following deep pustular formation, or ordinary furunculosis.

Dr. Shambaugh (closing the discussion):—In regard to the suggestion offered by Dr. Beck that the condition is the result of a localized disease of the bony wall of the external meatus resulting in the accumulation of granulations and pus under the skin of the external meatus, I would say that the swelling occurs from the anterior-superior wall of the external part of the meatus and not from the upper posterior wall, where we would find it in case a localized disease of the bone had occurred as the result of infection in a mastoid cell. Again, the condition has been under observation for five years, and during this time there has been no change in the appearance of the swelling, a condition hardly to be expected if we had a localized pus infection as the doctor assumed. The presence of normal skin covering the swelling which presents a smooth surface also argues against this hypothesis.

Dr. Shambaugh also demonstrated histologic preparations of the normal organ of Corti.

Dr. J. Holinger read a paper on Diagnosis and Pathology of Nerve Deafness, and Dr. Otto J. Stein reported a ease of acute bilateral middle-ear suppuration following an intranasal operation, and resulting in death from pyemia.

DISCUSSION ON DR. STEIN'S CASE.

Dr. William L. Ballenger:—I do not think the essayist raised the question of the possible source of infection being by way of the labyrinth. It would seem to me, owing to the intense deafness in this ease, that infection might have occurred by that route.

Or. Stein:—The physician who performed the nasal operation told me that the woman had some deafness, but could hear pretty well about the time the operated, but that there was a time when she did not hear well. What the degree of deafness was I do not know, but evidently it was nothing like the deafness which existed at the time I first saw her, because at that time she could not hear anything.

Dr. Casselberry:—Can you give us some details in regard to the intranasal operation?

Dr. Stein:—I understand that this physician removed a posterior hypertrophy of the turbinal on the right side two weeks before the last operation. Then she returned and he removed a posterior hypertrophy from the left inferior turbinal. It was several days before any ear symptoms arose, although the family thought that it was only two days.

Dr. Casselberry:—How did he remove the hypertrophy?

Dr. Stein:-With a snare.

Dr. Casselberry: - Did she have any suppurative condition of the sinus?

Dr. Stein:-Not to my knowledge.

Dr. William E. Casselberry:—Many of us have had the misfortune to observe eases of acute otitis media following nasal operations; in fact, it must be recognized as an occasional unavoidable consequence, although it is not clear that it really was due to the nasal operation in this particular case. But, supposing it was, what then? Two questions arise: First, what can we do in connection with

our nasal operations to prevent such an accident; what amount of intranasal antiscptie effort should be made preliminary to operating? Painstaking laboratory researches have taught us that the deeper recesses of the nose harbor but few pathogenic organisms, provided there is no acute inflammatory or chronic suppurative disease in progress. Strongly antiseptic fluids are irritating to the nostrils and themselves provoke a reaction which favors infection. Should we then spray and douche with actively antiseptic solutions in preparation for ordinary intranasal operations? Such is not my custom in this elass of cases; instead I rely on gentle cleansing, using a mildly antiseptic alkaline spray which is not bactericidal, but simply cleansing. Resorcin is added to the cocain anesthetizing pack as an additional mildly antiseptic measure, but I regard the irritation which is established in the nostrils by strenuous efforts at sterilization preceding operations as more detrimental than beneficial to the patient. This, however, is only my own personal experience, and I would be glad to know what others are doing in this direction.

Secondly, having adopted the best preventive measures, should or should we not then proceed with and advise patients to undergo intranasal operations and take the remaining risk? There is more or less risk in everything, in every minor surgical operation, and in every walk of life. Thus, we should put it clearly before the patients when they ask the question whether there is any risk attending the operation. They should be informed that they are justified in taking this modieum of risk for the sake of the benefits which are to accrue to them from the intranasal operation.

In the case cited by Dr. Stein a proper operation was made, as the patient was suffering from posterior hypertrophy of the turbinated bodies. These were snared off at an interval of a week. It is an operation that is frequently needed even to prevent recurrent acute otitis, as well as chronic inflammation and deafness. I feel that these remarks are due, in order that no unjust opprobrium may be thrown on nasal surgery, although, as before said, it is not clear that the reported fatality was anything more than a coincidental sequence, rather than a consequence of the nasal operation.

Dr. George E. Shambaugh:—One of the most interesting points in the case that has just been reported is the question of how the death of the patient was caused. If we assume that the fatal termination was the rsult of a complication of the suppurative otitis media, and it is not at all certain that this was the case, what was the route by which the general infection took place? There was nothing in the condition found in the mastoid cells to indicate that the infection was from extension through this area. The finding of pus in the pneumatic spaces of the mastoid process is quite the usual condition in cases of acute suppurative otitis media without producing any external evidence of mastoid involvement, such as tenderness or swelling over the mastoid, just as was found in this case. Mastoid disease, as we recognize it, with swelling and tenderness over the process, is a condition brought about by a retention of pus in the pneumatic spaces, with the resulting softening of the bone tissue itself. In this case, as I understand from the report, there was never any indication that the mastoid was thus diseased either in the symptoms over the mastoid or in the condition disclosed on opening the cells. The cells were filled with pus, but the bone was hard and glistening and nowhere any evidence of retention or softening of the bone. think it is safe to say that in all probability the condition found in the mastoid was not such as we would expect might lead to a fatal complication. There was a symptom in the ear, referred to by Dr. Ballinger, who points to a possible route for ageneral infection from the otitis media. This symptom was the spread of infection to the labyrinth. The degree of deafness described in the report could only be produced by an involvement of the inner ear. It could not have been produced by the middle-ear disease alone. The patient heard fairly well before the ear disease developed, so that it is positive that the labyrinthine involvement occurred during the course of the acute suppurative otitis media. An extension of the suppuration to the cavities of the inner ear is the logical conclusion to draw. With this complication present, the general infection could

occur from the labyrinth in several ways—through extension along the internal meatus, or along the aquaeductus vestibule or aquaeductus cochlea, or along the veins leaving the inner ear.

Dr. G. W. Boot, of Evanstou:-I would like to say that the operation might have had no direct connection with the fatal result in Dr. Stein's case. About a year ago I was called by a physician in Evanston to see his son, a boy of about 12 years, whom he suspected of having diphtheria. The boy had a false membrane covering the fauces and pharynx and had every appearance of having diphtheria, except that there was a great deal of edema of the pillars of the fauces and of the soft palate. Three thousand units of antitoxin were given at once. When I examined the culture the next morning I was surprised to find practically a pure culture of the pneumococcus and no diphtheria bacilli. Several smears and cultures taken afterward showed the pneumococcus to be the cause of the infection. Two days later the boy died without evidences of pneumonia and apparently of a pneumococcus infection of the throat alone. Three or four mouths ago I had occasion to treat a case of cerebrospinal meningitis without discoverable local source of infection. I made a lumbar puncture and found the pneumococcus as the sole cause of the disease. The boy had been having a slight cold before coming down with meningitis. If the pneumococcus could cause death in these two cases, I would suggest that it might have caused the infection in Dr. Stein's ease, that the infection of the labyrinth was probably through the circulation and not from the middle ear or mastoid, and that it is possible that the general infectiou may have been coincident with the operation rather than a result of it.

Dr. Stein (closing the discussion): -The case I have reported without question has several intensely interesting points connected with it, at least to me. One very interesting point to us as rhinologists is the possibility of aural infection from an intranasal operation. This point I have not attempted in any way to show in this case. I simply point out in the title of my paper that the ear trouble followed immediately on intranasal operation, but whether that was the indirect cause of death or not we do not know. Of course, to the lay mind, that possibly may appear as a positive factor. We know that aural affections do arise following such intranasal operations, and, therefore, there is a possibility that such an operation might have been the exiciting cause in this case. But the microscopic findings and the examination of the pus do not bear out such a possibility. With the finding of diplococci exclusively, it does not seem reasonable to suppose that they would be sufficient to cause this high degree of sepsis which the patient had, although later ou we did find the staphylococcus, but as to finding the streptococcus it is rather doubtful. I look on that finding as rather hazy, because it was never satisfactory to me.

The most interesting feature was, Where did this infection enter the circulation? We know that the commonest avenue is by bone necrosis from the neighboring sinuses of the middle ear. I thought I did a most thorough operation in exposing the sinus on both sides in order to expose such an avenue of infection, but it is possible I might not have gone far enough. That has been shown in the work of other operators, and it may be I missed the point of entrance. The possibility of pus entering the brain by way of the internal ear or labyrinth, although thought of by myself and others, is not well established, when we consider that there was nothing pointing toward it. There were no intracranial symptoms whatsoever. I mean by this that there were no symptoms of cerebral or cerebellar involvement. Pus entering the cranial cavity by way of the internal ear, of course, usually passes through the internal auditory meatus into the cerebellar cavity, and we would think that a collection of pus there, sufficient to cause death, would have produced some symptoms of brain abscess. The patient had no subnormal temperature, slow pulse, vomiting, convulsions, or anything which would point to a cerebellar disease. There was absolutely no paralysis. There was no degree of excitation of any muscle of the body. There was no change in the pupils, as both of them responded accurately to light. In short, there was nothing to center a diagnosis on any intracranial complication. We found no necrosis whatsoever in the entire mastoid, and I believe it was as thoroughly open as it could have been. I do not think the absorption could have taken place at that point, but it must have done so through the antrum and middle-ear cavity, which were markedly inflamed.

FORD-IROQUOIS COUNTY SOCIETY.

The Bi-County (Ford and Iroquois) Medical Society held its regular quarterly meeting at Watseka on the afternoon of Tuesday, Dec. 5, 1905. After dining together at the Iroquois House, the members assembled in the supervisor's room at the Court House. The meeting was called to order by the vice-president and, after the minutes of the last meeting had been read and approved, the following officers were elected to serve during the ensuing year: President, D. W. Miller, Gilman; vice-president, S. D. Culbertson, Piper City; secretary, Robert Lumley, Watseka; treasurer, C. O. Burgess, Piper City; delegate to Illinois State Medical Society, S. D. Culbertson; alternate delegate, A. J. Newell, Onarga; councilor (to serve three years), D. L. Jewett, Watseka. It was then moved, seconded and adopted that the committee on program be required henceforth to arrange the program for the next meeting and notify those expected to take part therein at least sixty days before each regular meeting, in order that members who present papers may have reasonable time in which to prepare them.

Dr. S. D. Culbertson, delegate to the State Society, then read a very able and interesting report of the last two meetings of the State Society. He was followed by Dr. Carey Culbertson in an illustrated lecture on Etiologic Factors of Retrodisplacements of the Uterus. Dr. O. O. Hall then reported one of those dreaded cases of Membranous Croup, in which tracheotomy became necessary and was performed. The closing paper, on the Duties of Physicians to Each Other and the Profession at Large, was by Dr. Mary B. Newell. Her views on medical ethics were unanimously approved. Every paper was good, every member present was interested and glad that he came. The debate was spirited and scholarly, creditable alike in what was said and in the manner of saying it. The new officers are determined to build up this Society and to make membership in it a standard by which to judge the medical men in Ford and Iroquois counties. They desire that it be democratic, that every member shall have equal opportunity to voice his views and take part in the proceedings. If he fails so to do the fault will be his own. They intend that the meetings shall be so interesting that not a member will willingly miss one of them, and that every progressive, reputable physician in the two counties shall, within a year, be on its roll or a candidate for admission. ROBERT LUMLEY, Secretary.

GALLATIN COUNTY MEDICAL SOCIETY.

The December meeting was held in Masonic Hall, Shawneetown, December 13, at 1 o'clock p. m., with all officers present. Members present as follows: Combs, Barnett, Starkey, Mershimer, Capel, Sherman, and Grattan; visitors, Drs. George H. White, Louisville, Ky.; James A. Waysnick and Joel A. Hart of Hardin County, Ill.

This Society is desirous of establishing a fee bill for the county that shall be uniform outside of the towns and the city of Shawneetown, the latter having adopted a fee bill several years since. The subject was taken up and thoroughly discussed and a committee appointed to make a report at the next meeting.

Papers were read as follows: Tuberculosis, by Dr. Sherman; Specific Urethritis, Dr. Capel; Influenza, Dr. Foster. The papers were all well prepared and much interest manifested in their reading and discussion, which was participated in by all present. Dr. J. L. Wiggins of East St. Louis, president-elect of the Southern Illinois Medical Society, reported his inability to be present at this meeting, but promised to prepare a paper and be with us at some meeting in the near future. The next meeting of the Society will be held in Shawneetown, and

Dr. Wiggins is very anxious that the doctors of this and surrounding counties be alive to the work of the profession, as he wants to make it one of the best in the history of the society. The next meeting of this Society will be held at Ridgeway, in the afternoon of Jan. 10, 1906.

J. W. BOWLING, Secretary.

JERSEY COUNTY MEDICAL SOCIETY.

The Jersey County Medical Society met at the office of Dr. Enos, Dec. 6, 1905, Dr. J. S. Williams in the chair. Members present: Drs. Barnett, Barry, Cheeney, Flautt, Enos, Waggoner, Bohanon, Gledhill, Giberson, A. D. Wewin. The minutes of the November meeting were read and approved. Dr. Tittertington read a paper on Pneumonia, giving the treatment of Osler, Billings and others, which was of much interest. Dr. Barnett in response to call, gave the Society the benefit of his experience in the treatment of this disease. Dr. Van Horne was called upon to give his experiences and spoke of the great success of the fly-blister, when applied large enough to more than cover the congested area and left on long enough to produce very slight irritation. This should be followed by a good poultice, which would abstract the serum without making a sore. He also spoke of the use in recent years of antiphlogistin, also of glyccrin applied on cotton flannel covered with cotton batting to absorb the exuded serum. Dr. Barry read a very interesting paper on Pneumonia and discussed Dr. Enos' paper. Dr. Gledhill made some very timely remarks on the disease, regretted that he had not heard the preceding papers. Dr. Erwin said that he usually put on a large fly-blister to relieve the congestion, and was not often disappointed. Dr. A. M. Cheeney spoke of pneumonia in the alcoholic patient, and said it had not been referred to by any as yet, and that in such cases it was important to administer stimulants. Dr. Bohanon spoke of the use of the lancet to reduce the inflammation of the lungs and of the need of supporting the patient by subcutaneous injection of the natural salt solution, which he suggested in addition to the many other good remedies mentioned here to-day. Dr. Williams gave us a good talk on the subject.

The censors appointed Dr. Enos for essayist for the next meeting to write a paper on "Common Colds" for the meeting on the first Wednesday in January, 1906. A vote of thanks was tendered Dr. Enos for the use of his office. On motion society adjourned.

MORGAN COUNTY MEDICAL SOCIETY.

The regular monthly meeting of the Morgan County Medical Society was held at the library, Nov. 9, 1905, J. W. Hairgrove, president, in the chair. Dr. R. L. Estes of Maredosia was elected to membership, and Dr. Norris of Jacksonville made application for membership in the society. The application was laid over under the rules till next meeting. Dr. J. W. Hairgrove was elected delegate to represent the society at the Senn banquet in Chicago. On motion the delegate to the state society was instructed to vote for the formation of a medical defense

fund, provided by a tax of \$1 per member.

Dr. Wakely read a paper on "Pneumonia," and Dr. H. A. Potts read a paper on "Cardiac Aneurism," with report of cases and exhibition of specimens. Dr. Wakely said he would confine himself to acute eroupous or lobar pneumonia as it appears in the young and vigorous subject. After giving the symptoms, diagnosis and course of the disease, he spoke of the cause. The etiology of the disease is still open to question and there is no one cause that can be said to always produce pneumonia. Two things are certainly necessary—the seed and the soil—and both of these must present certain conditions before the disease appears. There seems to be little doubt that the diplococcus to which pneumonia has been attributed is found in many healthy mouths and that there must be some other factor in the production of the disease than the mere presence of this coccus in the respiratory tract. When the resisting power of the patient becomes lowered, especially following rapid cooling of the surface or prolonged fatigue, the seed loses its quiescent condition, and, the soil being changed, the seed under the new conditions develops rapidly. The old dispute as to whether pneumonia is a local lung af-

fection with general toxemia or a local manifestation of a constitutional disease is still unsettled and it is likely to long remain so. Notwithstanding some argument to the contrary, pneumonia has seemed to prove itself feebly contagious, and for the protection of others care should be taken to avoid contagion by isolation and the destruction of spittle, etc. In the treatment of the disease, age and especially vitality have more bearing on the prognosis than any other factors. As to medicine, there are few drugs that have ever been known to check a cough, equalize circulation, stop pain, fortify the system or excite the secretions that have not been recommended on high authority as useful in pneumonia. Their usefulness has also been denied by equally high authority. It would seem that energetic measures used in the state of congestion to fortify the system and increase the secretions often abort a pneumonia, whereas a fully-fledged case runs a definite course but is questionably affected by medicines. In treating pneumonia we should recognize the fact that we have to deal with a self-limiting disease, producing its own antitoxin, in which we are just as likely to do too much as too little in our anxiety to help the patient.

The annual meeting of the Morgan County Medical Society was held at the library, President J. W. Hairgrove in the chair. Seventeen members were present. Minutes of the last meeting were read and approved. Dr. F. A. Norris was elected to membership and Dr. H. C. Woltman was proposed for membership. The report of the secretary was read and ordered placed on file.

A vote of thanks was given the secretary for his work during the past two years. The report of the treasurer, Dr. E. F. Baker, was read and accepted. The question arose as to whether one can be a member of the local county society and not a member of the state society. Referred to the board of censors, with instruction to report at the next meeting. The report of the librarian was received and ordered filed. The address of the retiring president was read and a vote of thanks tendered him for his work of the past year. The address was as follows:

ADDRESS OF THE RETIRING PRESIDENT, DR. J. W. HAIRGROVE.

It having become, in a measure, the custom for the retiring officer of this society to give at its annual meeting a summary of his conclusions or observations on the year's work and such recommendations for the future as are afforded by his year's experience, I therefore take advantage of this opportunity. The work of the society this year compares favorably with that of the past years in attendance and in the value of the papers presented. Innovations have been made, in that some of the meetings have partaken of a semi-medical character, as the meeting conjointly with the ministers of the city, as well as one with the teachers of our public schools and the open meeting on tuberculosis. I believe that these meetings were of real value to us and that similar meetings might be arranged for in the near future with additional profit to the members and to the general public.

We observe everywhere the benefits to be derived from co-operation. Communism teaches the economic value of concentrated effort. Why should not the society take advantage of this? Dr. Louis F. Bishop, in an address before the Alumni Association of the Sloan Maternity Hospital, said: "Clinical pathology will be made of more practical importance to the practitioner when routine examinations can be made of every case from beginning to end, and this without burdensome expenditure of time on the part of the physician or money on the part of the patient." To facilitate these measures Dr. Bishop suggests the following plan: "The establishment of a clinical laboratory on a co-operative basis, with such an organization that the observations for a number of physicians could be made at an expense to each that would be feasible. It would seem that here-tofore the effort to obtain the benefits of clinical pathology has been too cumbersome. In order to obtain a satisfactory analysis of a simple specimen of urine it has been necessary to employ an expert, whose time, skill and equipment are only to be had at a cost out of proportion to the importance of the work."

A clinical laboratory should, then, be organized in such a way that routine examinations could be made by a person trained in that particular work, but not necessarily having the broad training of a pathologist of established reputation, thus making it possible for the physician to have as many of the simpler observations made as he might desire without burdensome expense. Take, for instance,

the observation of urine during pregnancy. Here is a field which offers no end of trouble to the physician and to the patient. The same is true of Bright's disease. A laboratory properly organized could do the work at very little expense, and, by having vials, etc., labeled as belonging to a certain physician or as coming from the county society laboratory, would still not encroach upon his particular prestige, or else it would redound to the eredit of the society and its component members. Another thing that a co-operative laboratory could supply would be a place where the physician could obtain the temporary use of an equipped laboratory, with expert assistance, when he himself wishes to make examinations. It is not difficult for a physician to equip a small laboratory in his own house; the trouble is that he does not make enough use of it to keep it in running order. Let us suppose that any member of this society could have a complete laboratory analysis in every case demanding it of specimens such as blood, urine, sputum, gastric or fecal contents, at a minimum cost. Imagine the benefit to himself as a practitioner and to the public whom he serves! I fancy it would redound greatly to the credit of this community as a medical center. The idea is not Utopian or visionary. It is practical and possible. It would greatly stimulate original work and research.

Plans have been heretofore suggested that would make our library of more value to its members, and it has been suggested that nothing would add more to this than a card catalogue. While cataloging journals of the past would be a great expense, new journals should be subscribed for and complete card catalogue kept of their contents. I am pleased to say, as the librarian's report will doubtless show you, that a very gratifying progress has been made toward this end. All honor to those who have brought this about! It is to be hoped that the library will remain under the same capable management in the future as has been shown by our librarian this year. This subject can not be left without referring to the recent generous gift of Dr. T. J. Pitner to the library. The list of journals should be such as would be a credit to the society, and would not, I need scarcely say.

include the Medical Brief and the numerous journals of that class.

The members of this society should realize the importance of keeping in line with the state and national societies. I believe that the ethical tone of the society would be elevated by the avoidance on the part of the members of everything tending to newspaper notoriety. Many societies in the state have formulated resolutions to this end, asking the newspapers not to print or publish names of doctors in connection with any medical ease. This would eliminate them from a classification with the strenuous veterinarians who have stereotyped notices of their daily peregrinations in the daily press. Similar struggling efforts among the members of a society are seriously degrading to medical dignity and need only to be mentioned to be condemned. While the publication of cards in the daily papers may be considered a matter of individual right, it would certainly scem proper for the society to indicate that the limits of propriety go no further than the naming of the location and hours. It is but little eredit to the medical profession to see the long array of eards published, some of them so shrewdly worded as to try to catch the public eye, and yet keep within ethical limits, mixed in hodge-podge with the announcements of the plumber, veterinarian or the junk dealer calling attention to his wares. This commercial spirit, if earried on by our confrères in Chicago as it is here, would nearly fill one of the great dailies. Of course, the eustom of the town in this respect is accountable for a large number of professional cards. Among the tenets of our society, as in the state and national bodies, the exploitation of secret remedies and methods of cure is taught as reprehensible in the highest degree. It is a species of charlatanry which deserves the most severe condemnation. The very spirit of ethics demands that we do the very best we can for whomsoever finds his way to our door, but he should come unbiased by any influence save that of our personal repute.

The following officers were elected for one year: President, Dr. Josephine Milligan; vice-president, Dr. A. L. Adams; secretary, Dr. David W. Reid; treasurer, Dr. E. F. Baker; librarian, Dr. C. E. Black; member of the board of censors, three years, Dr. J. A. Day; delegate to the state society, two years, Dr. J. W. Hairgrove. Society adjourned.

David W. Reid, Secretary.

PEORIA CITY MEDICAL SOCIETY.

The annual meeting of the Peoria City Medical Society was held in the Society's rooms, in the Observatory Building, Tuesday evening, Dec. 19, 1905. The

following officers were elected to serve the Society for the coming year: R. A. Kerr, president; B. M. Stephenson, vice-president; F. B. Lucas, second vice-president; F. K. Sidley, sccretary; E. E. Barbour, treasurer; board of censors, A. J. Kanne, S. M. Miller and R. L. Green.

The treasurer's report was read and approved. It showed a balance of over \$300, which was very gratifying to the members. The secretary's report was read and approved, showing the membership to be 88 and the Society in a very harmonious and enthusiastic condition. It was decided at this meeting, on motion of E. M. Sutton, that a committee be appointed by the chair to furnish some kind of an entertainment with a dinner, to be given after the holidays. An amendment was offered to make this dinner an annual affair, and the chair appointed E. M. Sutton, F. B. Lucas and C. H. Brobst as a committee to arrange for the dinner.

The first meeting of the new year of the Peoria City Medical Society was held in their rooms in the Observatory Building, Tuesday evening, Jan. 2, 1906, with J. C. Roberts, the retiring president, in the chair. The following retiring officers were present: E. E. Gelder, first vice-president; W. R. Allison, secretary; board of censors, A. J. Kanne, F. B. Lucas, R. L. Green.

Minutes of the last meeting were read, approved and ordered spread on the records of the Society. The newly elected officers were installed and the retiring president, J. C. Roberts, read his retiring address, saying in part:

Address of Dr. J. C. Roberts, Retiring President.

Gentlemen:—On retiring from office, no other one circumstance could bring about such a feeling of satisfaction as the fact that I am to be followed by so able a man as our president-elect. I am conceited enough to feel that our Society in the past year has been a great success; but I am not so conceited but that I realize that the success depended upon the interest of those who were faithful in their attendance. Never has there been a more uniform spirit of good will or a more determined spirit to advance our profession. The membership has unanimously assisted the administration; and the program committee has had generous response to its invitations. Our membership has increased, by bringing into our Society an installment of good and worthy fellows, who are endowed with the spirit of true ethics that will tend to close up the gap that has existed in a greater or less degree between this and the state organization.

Our local Society is more than half a century old, and only within the last few years have we been able to do anything that in any material way has advanced our standing as a profession. It is true that all these years have been profitable from a literary standpoint; but the idea that we should grasp is that our profession must be cared for and nourished, that our future greatness may be zealously and persistently looked after; and I am sure that I speak the united sentiment of this Society in declaring that no member has a more logical conception of the future greatness or has done more that our profession may obtain that greatness than he who is a member of the judicial council from our own Society.

I have long thought and often remarked that practicing physicians should be wealthy. It is almost a paradox that we should do that which our high ideal of the profession appeals to us to do; and at the same time compete against poverty and all the "pathys" and fads that are urged against us. The ethical physician spends time and money investigating ways and means to protect the public. His prophylactics are given with almost prodigal generosity, tending in almost every possible manner to prevent the professional call which pays his living expenses. In our city we feel a pardonable pride that no disease germ lurks in our water. We have the foci of diphtheria and scarlet fever so closely guarded that they have become almost a novelty. And our energies are now being exerted upon the great white plague, with the hope and expectation that we may see it succumb, as have the terrors of yellow fever and many others, that in the past made employment for us. Surely if anyone ever succeeded in killing the goose that laid the golden egg the medical man has done it.

Medical ethics has built a wall so straight and tall that the path is truly very straight and narrow. It has cut off all small roads for financial gain, for adver-

tising one's prowess, parading our superiority before the public, patenting any drug, instrument or method or in any means whatever, except our worth to each individual patient. True, some have found the yoke too heavy, and the sleepy public are surprised to know that wonderful ability has been lying dormant, only waiting for printer's ink to flash it before the public. Some grow restive under the restraint of the code and feel that they must let suffering humanity know what power to heal is in store for them. But alas, when they have severed the cord that holds them in bond with the spirit of the true profession they glitter and shine before the public like fresh ink upon glossy paper; but soon they will have lost the staying spirit of the profession, they lose their glitter before the public and either drop from their respect or enter again the fold. The efforts of our profession lead us into a very straight path. Let us, as a redress from our curtailed financial resources, educate the public to appreciate our profession, and let us teach them that, while we give to the public our energies and ideas to make our city one of health and happiness, using every means to stamp out contagion, protecting humanity throughout the world—let us teach them to know we are not a charity organization. Teach them that our knowledge of prophylactics is worth something. Let us teach the public to feel that the neighbors and friends of the poor, who are most personally interested in their welfare, are the ones to meet the bills for medical attention. In politics let us not be Democrats, Republicans, Prohibitionists, Socialists, or what not, but let us be physicians, and make our vote the balance of power that shall be wielded to benefit our profession,

The address was discussed by R. W. Allison, M. S. Marcy, S. M. Miller, E. E. Gelder and A. J. Kanne. S. M. Miller then moved that the secretary be instructed to convey a message of good will and the sincere hope of a speedy recovery to C. U. Collins and D. W. McGee, who were sick at that time. E. M. Sutton, as chairman of the banquet committee, reported that the banquet would be held at the Creve Coeur Club on Thursday evening, January 4, and that Hugh T. Patrick of Chicago, the well-known specialist on nervous diseases, would be the guest of honor. On motion of Dr. Limmer the Society was adjourned to meet again Tuesday evening, January 16.

The banquet of the Peoria City Medical Society was held Thursday evening, January 4, in the banquet hall of the Creve Coeur Club. About forty members of the Society, accompanied by their wives and ladies, were present. At 7 o'clock the party was seated at the tables, which were prettily decorated for the oceasion. After the dinner, toasts were responded to by several present. R. A. Kerr, president of the Society, was toastmaster, and introduced Hugh T. Patrick of Chicago, whose subject was to have been "How Not to Get Nervous," but when he was confronted by so congenial a set of Peoria representative professional men and so many talented women, he placed his subject under the lunch cloth and talked in an impromtu manner of the medical profession. His address was one of the finest ever delivered in Peoria and was greeted with hearty applause. J. C. Roberts, the retiring president; W. R. Allison, the retiring secretary, and Judge Winslow Evans, a guest of the Society, also responded to toasts. It was a very enjoyable evening and one that will long be remembered.

F. K. Sidley, Secretary.

ROCK ISLAND COUNTY MEDICAL SOCIETY.

The regular meeting was held at the Harper House on Tuesday evening, December 12. Fifteen members present. The most of the evening was spent in discussing the best interest of the profession in Rock Island County. An effort is being made to have the press of the county omit the names of doctors in connection with surgical operations, accidents and emergencies: Resolutions are to be circulated for the profession to sign, which will be given to the papers. The "boy phenomenon" made his appearance in Rock Island on the evening of December 11. He was booked for an exhibition at the theater for Wednesday night. Our county committee got busy with State's Attorney Scott and the "boy" was advised to move on. His manager was very anxious to continue here, but after the meeting of the County Society, at which the committee was instructed to keep within the

law and prevent the show, if possible, they found we meant business and decided to hunt a more congenial climate. After the business meeting, Dr. Martin of Sheppard read a very interesting paper on Influenza, which was discussed by most members. Dr. Ostrom of Rock Island presented a case in which he had removed the entire lachrymal sac two weeks ago. Recovery was good. The next meeting will be held the second Tucsday in February.

SANGAMON COUNTY MEDICAL SOCIETY.

The Sangamon County Medical Society met in the Lincoln Library, Dec. 10, 1905. Minutes of the previous meeting were read and approved. The following annual report of the secretary-treasurer was presented:

The society has at present eighty-three members in good standing. During the year it has gained fourteen new members and lost two by removal from the state. There have been ten regular meetings and one called meeting, with an average of nineteen in attendance. Eleven papers were read and discussed.

The financial report follows:

Balance on hand at beginning of year. $$11.9$: Recelpts from dues, seventy-five at \$3	0
Total\$242.9	ı
DISBURSEMENTS.	
To banquet\$ 63.00)
Janitor 8.00)
Stamps)
Statlonery and printing 20.00)
Services secretary-treasurer)
Dues to Illinois State Medical Society 99.00)
Total	5

The application for membership of Dr. Lloyd of Springfield was read and referred to the board of censors. Dr. J. W. Robinson of New Berlin was elected to membership. A communication from the secretary of the committee on arrangements for the next annual meeting of the Illinois State Medical Society, to be held in this city, was read. The literary exercises consisted of a paper with report of a case of chylo-thorax and chylous ascites by Dr. L. C. Taylor. The literature on the subject, which is very scant, was reviewed. Two forms of chylothorax were mentioned: the true type, in which the fluid consists of chyle, and the pseudo-chylo-thorax, in which the effusion is the result of fatty metamorphosis of the ordinary sero-fibrinous or purulent exudate. As the case will be reported in one of the journals after more thorough preparation, it will not be abstracted at this time. The etiology in these cases is obscure. It has been found in Hodgkin's disease, tuberculosis, malignant lymphoma and traumatism. Gross pathologic specimens from the case were shown and a supplemental report promised. The paper was greatly appreciated, but the discussion was limited, owing to the rarity of the condition. Dr. Kreider had seen several cases, and one of his cases had been seen by several present.

Dr. F. S. O'Hara presented two well-marked cases of latah. Both were young men and presented some of the peculiar reflex nervous symptoms seen in these cases. He called especial attention to the medico-legal difficulties into which such patients might be drawn by acts committed while in this uncontrollable condition. The doctor also showed a patient and a skiagram of a fracture of the bones of the elbow, in which the repair was especially good, considering the extent of the injury. Dr. G. R. Bradley reported a case of mental aberration, probably melancholia or senile dementia, occurring in a woman of 62.

The meeting closed in order.

C. R. SPICER, Secretary.

The Sangamon County Medical Society held its regular monthly meeting Jan. 8, 1906. Drs. Allen and Lockwood of Virden were guests of the society. Minutes of the previous meeting were read and approved. A communication from Dr. J. C.

Christie, chairman of Section 2, Illinois State Medical Society, was read, in which a special request was made that members of this society contribute to that part of the program in the coming annual meeting. A motion to revise the constitution of the society prevailed, and the following committee was appointed: Drs. L. C. Taylor, Munson, Babcock, Kreider and Berry. The following resolutions, presented by Dr. A. L. Brittin, were adopted:

WHEREAS, Numerous and constantly increasing numbers of doubtful, not to say worthless or harmful, medicinal preparations are now being exploited on the medical profession of this country by the enterprising and avaricious manufacturing concerns through their smooth traveling salesmen and by a vast quantity of advertising literature, with which we are all deluged from time to time, and inasmuch as the average practitioner has neither the time nor inclination to sift all this mass of material and to separate the good, if there be any, from the worthless or harmful, of which there seems to be much, be it hereby

Resolved, That the Sangamon County Medical Society heartily approves the action of the American Medical Association in appointing a Council on Pharmacy and Chemistry to investigate non-officinal drugs and medical preparations; be it

further

Resolved, That this society feels the necessity of such investigation and feels that it can place absolute confidence in the findings of this honorable council, to the end that the unworthy and fraudulent among the class of so-called remedies before referred to may be exposed and no longer serve to mislead the profession and to injure their patrons, the public at large; and the society hereby plcdges its support to the trustees of the American Medical Association in carrying out the work instituted by this council; be it further Resolved, That this society heartily indorses the action taken by the Ladies'

Home Journal and Collier's Weekly for the stand these publications have taken in

exposing the secret-remedy frauds.

Dr. C. A. Lloyd, Springfield, was elected to membership and the application of Dr. Bullard of Springfield was read. Dr. Kreider read a paper on "Frontal Sinusitis" and showed two interesting clinical cases. The anatomy of the frontal and other sinuses accessory to the nasal cavity was reviewed, showing the means of infection and manner of drainage. The symptoms of acute sinusitis-pain, localized over the eye and increased by pressure over the supra-orbital foramen, also by mental effort—was noted and the opinion expressed that many unrecognized cases were attributed to catarrh or neuralgia. Trans-illumination by means of an electric light and the x-ray were mentioned among the means of diagnosis. The treatment indicated is drainage of the infected cavity. This should be through the normal opening by blanching the membranes occluding it, by flushing, spraying or local applications. When these means fail, by radical operation, by which the sinus is freely opened, drained and packed. If the case be chronic, thorough curettement must be done.

The essayist has seen the following seven cases in seventeen years: 1. Acute case cured without operation. 2. A chronic sinusitis with spontaneous opening through anterior wall. A gold tube was worn for nearly twenty years, the patient dying from a cause not related to the sinusitis. 3. Sister in hospital suffered from pain over brow, especially on stooping; was treated for sinusitis and recovered. 4. Patient received a compound fracture of upper margin of orbit, opening the sinus and depressing the outer table. Author raised depressed bone and drained eavity. Recovery slow, but complete. Loss of eye due to original injury. 5. Had frontal headache and nasal discharge. Polypi removed and treatment applied to nasal cavity. Recovery. 6. A carpenter who had pain in the head on stooping. Swelling about eye, which improved during the night. Intense pain on pressure over orbit. Redness had been mistaken for erysipelas. Operation refused. Treated with peroxid of hydrogen and iodin by another practitioner. Improvement has resulted, but two sinuses have formed, one still remaining. 7. Woman, 52 years. Had specific history. Meningeal symptoms marked. Pain over sinuses. Cavity opened and cleansed. Radical operation. Patient died twenty-one days after operation with well marked symptoms of abscess of the brain.

to a mener of Ir Bullet win conten out the difficulties of to go or and immalian them; from fact that it have number AR IN VI I IR THE LIFE ALL HE STEET HAT HE THE METERS IN LIBERT IN the to. -: . . In this city I have to W vice he have be the ter-1 of 1 to 1 to 2 and the last to take at amenderable entra the truever The more of these than he same under the pure in house these he present v of a contract to use it the pening the Sine by equipmentions the transport of the second of · s at a little viter . It is it is the first better in the in I a " " LOR CETTOR PROTES IN THE PRINT HEITE IN THof the second of that I are entaged the entaged the state very interest i retrie togress to an extension of the particular of the de come de la langua reacet de experience il tvo esses do de-I wast thrive I be think one views be elevated lie one and invited inc a 17 V 1 197 19. A

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straces for B. B. Committee and Dr. A. Lee Haglet for M. Altman. Dr. Charles Patton, Dr. C. W. Compton Dr. C. H. McRifree, Dr. Oscar F. Maxon for 2. P. Starment.

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Transportation for A for Taylor, chaleman; Dr. I. W. Metz, Dr. W. A. Young, for f f. Menca t for J C. Waters

VERMILION COUNTY MEDICAL SOCIETY.

The November meeting of the Vermilion County Medical Society was called to order to the council champer at 8.30 p. m. by the president, F. N. Cloyd. The secretary being assent, P. F. Clark was appointed to act as secretary. The minthe of the fether meeting were read and approved. Dr. Fairhall moved to

rescind the action of the last meeting regaring the social sess if an object the following: Invite each member of the bollety and give him the trial go i bringing with him one medical friend, not a member. This motion was sometheby J. W. O'Haver. After a lengthy discussion the motion was both inviting a motion of E. E. Clark substituted, inviting only members of the Society. Socially J. B. Motion and carried. On motion, it was recited to defray the expenses of the social session out of the treasury as far as possible, any denoted by the made up pro-rate among those who attended the session. The report of the library committee was accepted and the committee continued. E. E. Clark was appointed to go to Chicago at the expense of the Society of found advisable after further correspondence, and look into the matter of society of found advisable after further correspondence, and look into the matter of societing books for the motion of a medical library. A communication from Dr. Kradov regarding the program of the evening, was laid over till the next regular meeting.

The program for the evening was a Symposium on Tubersulosis. The paper on Diagnosis not being available, the paper on the Medical Treatment of Tubersulosis was very ably presented by J. B. Morton of Ridgefarm. The paper was one of the best presented this season and a general discussion function. The Surgical Treatment of Tubersulosis was taken up by S. C. Ghidden in an interesting talk, bringing out the important features of the surgical side of the subject Adjourned.

E. E. Clark, Sometrory get term.

The Vermilion County Medical Society met in the Plana hotel partors. Dec. 11. 1905, it being the annual meeting and electron of officers. Minutes of November meeting read and adopted. Report of library committee received and committee discharged. The matter regarding the medical lefense fund, agitated by the state society, was faid over until the next meeting. Robert McCaughey of Hoopeston presented the names of Isaac Mayhue of hast Lyun and T. C. McCaughey of Hoopeston. The treasurer's report was read, received and placed on file. H. W. Morehouse made a motion that a committee be appointed to draw up a set of resolutions on the leath of J. M. Wilkins of fairmount, which was seconded and carried and a committee appointed by the chair.

The election of officers resulted as follows: President, T. E. Walton, vice-president, R. A. Clayd: secretary-treasurer, E. E. Clarks sensor, A. Metril Miller Stephens & Barnhart were retained as attorneys for the society.

At this point the society adjourned to the diming-room of the hotel where the committee had arranged a splendid banquet of which the members particle. This was followed by appropriate speeches from the following members: F. N. Cloyd, the retiring president: C. E. Wilkinson, H. F. Becker, J. M. Guy, Joseph Fairhall, E. M. Smith and A. J. Leitzbach. H. W. Morehouse acted as master of ceremonies.

E. E. Clark, Secretary.

This society met Montay evening, Jan. 8, 1906, in the City Hall. Minutes of the December meeting were read and adopted. The board of censors reported favorably on the names of T. C. McCauchey of Hospeston, Isaac Maybus of East Lynn and C. E. Brown of Rossville, followed by their election to membership. A. J. Leitzbach of Fairmount read an original and interesting paper on "Rheumatism," the discussion of which was opened by R. A. Cloyd of Westville. Next on the program was an interesting and characteristic paper by Joseph Fairhall on Legal Medicine. On motion it was decided to instruct the felegate to the coming state meeting to vote in favor of the proposed defense fund suggested by the state society. Adjourned.

WILL COUNTY MEDICAL SOCIETY.

The regular meeting of Will County Medical Society was held Tuesday evening Dec. 5, 1905, at 8 o'Clock, in room 103, Loughvan Building, Dr. Benson presiding. The minutes of the meeting of Nov. 7, 1, 5, were read and approved. The pager of the evening on Pemphigus Neonatorun was presented by Dr. N. J. Cohenour, with a report of a case. The paper was discussed by Drs. Bowles, Benson, Nash and Munch.

Dr. Nash, chairman of the committee appointed to draft a suitable memorial on the death of Dr. George C. Raynor, presented the report of the committee and read the obituary. On motion, it was decided that the paper be made a part of these minutes and the secretary instructed to mail a copy to the brother of the deceased. The matter of supporting the legal defense fund of the State Society was brought before the meeting and fully discussed by the members present. On motion, it was decided that the delegates of this Society be hereby instructed to cast the vote of the Will County Medical Society in favor of the measure. The report of the treasurer for the year 1905 was read and, on motion, was accepted and ordered filed.

The following resolution was presented by Dr. Cohenour:

Resolved, That the Will County Medical Society expresses approval of the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry; that this Society endorses the work of investigating non-official drugs and medicinal preparations, and that this Society gives its hearty support to the educational campaign regarding secret nostrums and commends the good work of the Journal of the American Medical Association.

The resolution was adopted and the secretary instructed to spread the same upon the records of the Society and forward a copy to the Secretary of the American Medical Association.

Dr. M. K. Bowles then presented a resolution as follows:

Resolved, That the Will County Medical Society express its appreciation and endorsement of the work of Collier's Weckly and the Ladies' Home Journal in educating the public in regard to certain dangerous patent medicines, and that this Society believes this educational campaign to be of immense value, and stands ready to co-operate.

This resolution was adopted, ordered spread on records and copies forwarded to journals mentioned.

The Society then proceeded to the election of officers for 1906, the result being as follows:

President, Dr. A. Nash, Joliet; vice-president, Dr. R. L. Eldridge, Frankfort; secretary-treasurer, Dr. M. K. Bowles, Joliet; delegate to State Society (two years), Dr. W. H. Curtis, Wilmington; board of censors, Dr. H. W. Woodruff, Joliet; Dr. M. E. McGann, Joliet; Dr. F. W. Rulien, Joliet. The terms of office for each censor to be decided by lot and reported at next meeting. No further business appearing, on motion the meeting adjourned.

F. C. FISHER, Secretary.

The regular meeting of the society was held in Joliet, Jan. 2, 1906, with President Nash in the chair. Those present were Drs. Nash, Fisher, Patterson, Kingston, Cohenour, McClannahan, Munch, Kelly, Woodruff, Shaw and Bowles. Dr. E. A. Kingston of Lockport presented a paper entitled "Chorea and Its Attending Complications," which was very generally discussed. Dr. Bowles reported the birth of a dead anencephalic monster at the termination of an uneventful nine months' pregnancy. She then exhibited her obstetrical armamentarium fitted up with the idea of safety to the patient and the convenience and fortification of the physician. The discussion was taken up by the society. Dr. Fisher read a letter from Dr. R. L. Eldredge, reporting the cruel imposition on a patient dying of cancer by the "Cancer Eradicator Medicine Company," not incorporated, located at 3726 Cottage Grove avenue, Chicago, and managed by D. F. Bixler. This matter was ordered referred to the State Board of Health. The letter from Dr. Carl E. Black asking for comments on The Journal was read. No adverse criticism was offered. All are pleased with The Journal as it is. The application of Dr. Ira Willets was received and referred to the board of censors.

NEWS OF THE STATE

Dr. J. Dawson has located at Towanda.

Dr. Frank H. Lord, Plano, has gone to New Mexico.

Dr. James Henry, La Harpe, has retired from practice.

Dr. Lemnel Tibbets, Rockford, has removed to California.

Dr. F. W. McNamara of Chicago is visiting in San Francisco.

Dr. Ernest S. Reedy, Bloomington, has located in Blaine, Wash.

Dr. John B. Miller, Gilson, has decided to move to New Mexico.

Dr. W. P. Armstrong, of Springfield, has been visiting in Texas.

Dr. Edwin Janss reached Los Angeles after a trip around the world.

Dr. W. A. Mudd, of Athens, recently visited friends in Louisville. Ky.

The Dr. John Warner Hospital, Clinton, will be dedicated February 15 next.

Dr. Grant Irwin, Quincy, was fined for hunting in Missouri without a license.

Dr. Robert C. J. Meyer has been appointed commissioner of health of Moline.

Dr. Andrew J. McIntosh, Allendale, is dangerously ill with cerebral hemorrhage.

Minerva Hospital, erected by Dr. John A. Colbourne at Pontiac, has been opened.

Dr. John B. Meigs, Manito, who was recently injured by a broncho. is recovering.

Dr. George A. Sihler, Litchfield, was operated on for appendicitis December 18.

Dr. Clifford U. Collins, Peoria, was operated on for appendicitis December 23.

Dr. and Mrs. George F. Heideman, Elmhurst, have gone to Alabama for the winter.

Dr. Lemnel Tibbetts, Rockford, expects to visit California in two or three months.

Dr. R. Emery of Peoria has been indicted by the grand jury on the charge of murder.

Dr. and Mrs. Benjamin E. Jones, Rock Island, have gone to California for the winter.

The net proceeds from the Cribside Kirmess recently held in Chicago amounted to nearly \$25,000.

The city council of Springfield has decided to give the Warner Hospital eity water free of charge.

Dr. David W. Magee, Peoria, fell, November 24, sustaining a compound fracture of the left hip.

Dr. and Mrs. J. P. Morison, of 2960 Michigan avenue, Chicago, are spending the winter in California.

Dr. Otto W. Lewke, coroner's physician, is seriously ill with septicemia from a postmortem wound.

Dr. C. E. Black, of Jacksonville, has been elected president of the Morgan County Historical Society.

Dr. Clifford V. Collins, of Peoria, who was operated on for appendicitis in December, has fully recovered.

Stonington is under quarantine on account of five cases of diphtheria and the public school has been closed.

Owing to the prevalence of diphtheria the schools at Metcalf, Shelby-ville and Washburn have been closed.

Dr. J. C. Westervelt of Shelbyville has been appointed chief medical inspector of the State Board of Health.

The Chicago Health Department has asked for an increased appropriation of \$200,000 for the coming year.

After an interval of several months a case of smallpox was discovered in Chicago on the West Side, January 11.

Dr. Alonzo M. Wheeler has been elected president of the Chicago Association of Kalamazoo College Alumni.

Dr. J. H. Piffey, recently an officer in the medical department of the U. S. Navy, has opened an office in Girard.

Drs. N. S. Penick and J. N. Dixon, of Springfield, have returned from a prolonged visit to Hot Springs, Ark.

Dr. Franklin E. Wallace has been appointed health officer of Monmouth during the absence of Dr. William H. Wells.

Dr. Harry G. Hardt has assumed his duties as assistant physician at the Illinois Northern Hospital for the Insane, Elgin.

Drs. Robert J. Christie, Jr., and Otis Johnston, Quincy, have been appointed local surgeons for the Burlington system.

Dr. T. H. Wagner, surgeon for the Steel Wire Company of Joliet, has been appointed surgeon for the Rock Island Railroad.

Dr. A. L. Brittin, of Athens, was recently called to St. Louis by the illness of his nephew, who is a medical student there.

The addition to the Marietta Phelps Hospital, Macomb, is almost completed. Dr. Samuel C. Stremmel is surgeon-in-chief.

The court has ordered the sale of St. Joseph's Hospital at Paris to satisfy claims of creditors which amount to about \$10,000.

In honor of his seventieth anniversary, a dinner was recently given Dr. Isaac N. Danforth by the Therapeutic Club of Chicago.

Dr. James C. Stewart, Anna, has been appointed local surgeon for the Illinois Central Railroad, vice Dr. Samuel Dodds, removed to Cairo. Dr. J. H. Veatch, of Cornell, has disposed of his practice to Dr. F. B. Morgan, of Fort Collins, Colo., and is now located in La Salle.

The schools of Spring Valley were closed for several weeks during December owing to the prevalence of smallpox in the neihborhood.

Dr. P. H. Kelly, of Chillicothe, was thrown from his buggy while going to call on a patient. A dislocation of the right elbow resulted.

The skylight of Grace Hospital, Chicago, was torn away by the wind on January 5, causing great alarm among the patients. No one was injured.

Dr. Oliver B. Hart, Chicago, was sentenced to forty-five years in the penitentiary by Judge Barnes for the murder of Irene Klokow last October.

Dr. Vaclav H. Podstata has been reappointed superintendent of the Cook County institutions, Dunning, and Dr. Haim I. Davis, county physician.

Dr. Garrett J. Hagens met with a serious accident in a runaway three weeks ago, in which his right hip was injured. He is now able to be about.

Diphtheria is reported as prevalent in McLean, Bloomington, Toledo and Kankakee. There are also a number of cases reported in Chicago.

Dr. A. J. R. Hobart, of Ashmore, has had two strokes of paralysis in succession. As the doctor is 68 years old, his recovery is exceedingly doubtful.

The Winnebago County Medical Society elected Dr. P. H. Calhune as president and Dr. W. E. Park as secretary and treasurer for the ensuing year.

Dr. Thomas Croswell, Streator, was made an honorary member of the Northern Central Illinois Medical Association at its recent meeting in Streator.

Dr. Harold Evenson, of Ottawa, has been appointed trustee of the Illinois Charitable Eye and Ear Infirmary, to succeed Dr. Frank Allport, of Chicago.

Dr. Maurice M. Doty has been appointed traction expert, which includes the duty of enforcing the ordinances tending to insure satisfactory street-car service.

The home of Dr. N. P. Merritt at Ellery was entirely destroyed by fire recently. Dr. Ellery and his wife had just returned from a visit to Hot Springs, Ark.

The presence of a number of cases of diphtheria at McLean has led the mayor of the town to issue a proclamation forbidding all public meetings for the present.

Dr. Carl Beck has been chosen honorary president of the Society of Former German University Students, at its annual meeting held in New York City, December 21. Drs. Carson, of Chatsworth, and Kern, of Thawville, were bound over to the grand jury under \$5,000 bond following the death of Miss Nellie E. Clark, of Brenton.

A mammoth bowlder has been placed in Grant Park, by the Chicago Medical Society, in memory of Dr. Samuel Guthrie, the discoverer of the anesthetic properties of chloroform.

Several cases of smallpox have appeared in Jersey, Greene and Macoupin counties, and on December 17 reports were received of the appearance of the disease at Galesburg and Spring Valley.

Dr. M. F. Clark, one of the assistant physicians at the Northern Illinois Hospital for the Insanc of Elgin, has resigned and will return to Massachusetts to take up the practice of medicine.

In the case of Dr. Joseph R. Hollowbush, Rock Island, charged with perjury by Jerry McCarthy, the state's attorney authorized the dismissal of the case, completely vindicating Dr. Hollowbush.

After a trial occupying ten days the jury in the case C. E. Demsey against Dr. St. Elmo M. Sala, Rock Island, for damages on the charge of alleged malpractice, returned a verdict for the defendant.

Dr. Alfred Dahlberg was arrested recently on the charge of selling cocain to a band of juvenile thieves. Dr. Dahlberg was in the employ of the Central drug store, 260 West Madison street, Chicago.

Dr. J. W. Donahue, of Plainview, Macoupin County, is seeking reelection to the next General Assembly. Dr. Donahue was an active member of the last legislature and it is hoped that he will be re-clected.

The mayor of Colfax, Ill., has issued a proclamation forbidding any person, under penalty of fincs, from going from Lexington to Colfax, owing to the presence of a number of cases of smallpox in the former town.

Dr. J. Whitefield Smith has been elected president; Dr. John L. Yolton, vice-president; Dr. Horace W. Elder, secretary-treasurer, and Dr. Edson Hart, staff representative, of the staff of Brokaw Hospital, Bloomington.

During the past two months diphtheria has occurred in more or less epidemic form in about 125 cities and villages, spread over sixty-one of the 102 counties of the state. As a rule the disease has been mild in character.

Dr. Joseph Vasempaur and Dr. Charles Boddiger, both of Chicago, were held to the Criminal Court by the coroner's jury following the death of Annie Killhoff, who died at her home, 3223 Ashland avenue, as the result of an operation.

The following have been appointed members of the State Board of Charities: Dr. Frank Billings, Chicago, president; Rabbi Emil G. Hirsch, Chicago; Miss Julia Lathrop, Chicago, and Dr. John T. McAnally, Carbondale.

The State Board of Health reported smallpox in Greene, Macoupin. Knox, Jersey, Logan, McLean, Adams and Pike counties. The disease spread from Jerseyville, Jersey County, into Macoupin and Greene counties, which are adjacent.

Dr. and Mrs. J. W. Pettit. Ottawa, have left for Texas. They will visit relatives in Houston and other towns. Dr. Pettit will probably remain in Texas for two or three weeks. His wife intends to spend the balance of the winter there.

The state's attorney of Sangamon County has filed information against William Zapf, Robert Clarkson and Albert Mitchell, druggists of Springfield, charging them with violating the law forbidding the sale of cocain without a prescription.

The 29th annual meeting of the State Board of Health was held in Springfield, January 25. Dr. George W. Webster, of Chicago, was reelected as president, and Dr. James A. Egan, of Springfield, was elected secretary and treasurer of the board.

During the year 1905 Sangamon County paid to physicians, for recording births under the new law, the sum of \$429.53, representing approximately 1,800 births, or 22.5 per thousand inhabitants, during the year. The death rate in this county is about 10 per thousand.

An explosion of drugs in the basement drug room of Michael Reese Hospital, Chicago, broke a number of windows and set fire to the building. The blaze was extinguished by the employés of the hospital. The eighty-four patients in the building were not disturbed.

The Morgan County Medical Society has entered into an arrangement with the library board of Jacksonville, by which space is to be furnished in the Public Library building for a medical library. The society will also use the library building as a meeting place.

Of the sixty-eight applicants who took the examination for the civil service medical inspectors in the Chicago Health Department, Dr. Edward W. Quick received the highest mark, Dr. Paul F. Morf was second, Dr. Joseph T. Friedman third and Dr. Kellogg Speed fourth.

Plans have been prepared for an addition to the Mary Thompson Hospital for Women and Children at Adams and Paulina streets, Chicago. A dormitory for nurses, with a capacity for thirty-five, will be built in the form of a three-story brick and stone building at a cost of \$20,000.

The Chicago Medical Society has asked Judge McEwen to grant an injunction restraining the South Park commissioners from interfering with the bowlder which was placed in Grant Park just before the holidays as a memorial of Dr. Samuel Guthrie, the discoverer of chloroform anesthesia.

In the case of Louis Re, arrested on the charge of selling eucain, the judge held that eucain is not mentioned in the state poison law, and that the city ordinance forbidding its sale is invalid because the state alone has power to make such prohibition. The defendant was accordingly acquitted.

Dr. William F. Briney, 182 State street, Chicago, was held to the grand jury by the coroner, being charged with performing an operation on Mrs. Frank Martin, 28 years old, 3555 Vincennes avenue, who died

January 16 at the Wesley Hospital. Dr. Briney is held in bonds for \$15,000.

Dr. F. M. Stewart, Chicago, was recently brought before Judge Kersten in the Criminal Court on a charge of robbery. It is alleged that he victimized a patient of his out of \$100 by telling him that he was suffering from "brain troubles and heart disease." The case has not yet been decided.

At a meeting of the Oak Park Business Mcn's Association, December 8, Dr. John W. Tope announced that he had purchased a site for a hospital and that the Sisters of Misericordia of Montreal would build a hospital on this site next year. He declined, however, to give the location of the hospital site.

The state civil service examination for home visitors will be held at the Asylum for the Incurable Insane, Peoria, February 6; at the University of Illinois, Urbana, February 7; the courthouse, Engham, February 8, and the thirteenth floor of the Federal Building, Chicago, February 9, and will be open to men and women between the ages of 25 and 50 years.

At the weekly meeting of the Presbyterian ministers of Chicago, on January 22, Sherman C. Kingsley, secretary of the Chicago Relief and Aid Society, exhibited a map showing the location of 5,000 cases now being cared for by the nurses of the organization. This work is being done by the day nurses of Chicago and extends over an area of fifty square miles.

During the trial of Dr. Nichols, of Urbana, for blackmail, the daily papers stated that Dr. Nichols was president of the Champaign County Medical Society. This statement is protested by the members of the only Champaign County Medical Society recognized by the State Society. Dr. Nichols is not only not president, but he is not a member of the society at all.

The newly organized Eastern Illinois Ophthalmological and Otological Society met at Champaign on Tuesday, January 16. This society at present includes specialists in the eye, ear and throat located in Danville, Champaign, Bloomington, and Decatur. The next meeting will be held at Decatur, March 6, at which time the organization will be completed and officers elected.

Dr. J. Sheldon Clark, Northwestern University Medical School. 1903, associated since graduation with Dr. J. H. Stealy, a general surgeon at Freeport, has lately been appointed interne in the Illinois Charitable Eye and Ear Infirmary to serve until June 1. He expects to return to Freeport and associate himself with Dr. W. J. Ridcout. They will limit their practice to the eye, car, nose and throat.

The cornerstone of the new Englewood Hospital was laid on Sunday, December 31. H. C. Staver, president of the hospital board, presided. Rev. A. P. Fors, chairman of the board of directors, delivered the principal address. The new hospital will cost \$85,000 and will be a modern building of five stories.

The civil service commission has selected Drs. Hugh T. Patrick, Frank Billings, John B. Murphy and Harold N. Moyer, Chicago, and Dr. Frank P. Norbury, Jacksonville, as a board to prepare the questions and grade the papers in examination for assistant physicians in the state hospitals for the insane.

The Chicago Lying-In Hospital and Dispensary is planning a new hospital building, which will cost \$200,000. During the year of 1905 6,640 women have been attended at their homes and 1,103 women have been received at the hospital. Five hundred cases have been refused owing to lack of accommodations.

The cornerstone of the new Englewood Union Hospital was laid at Chicago with elaborate ceremony, December 3. H. C. Staver presided and Dr. A. P. Foss placed the stone in position. The new building will cost about \$85,000, will be five stories in height, fireproof and equipped in accordance with the most advanced views.

Mrs. E. R. Lines was arraigned before a Decatur justice of the peace on the charge of practicing medicine without a license. The prosecution was conducted by James S. Baldwin, attorney for the State Board of Health, following the death from diphtheria of a child of Harry Fisk of Decatur, whom, it is said, the woman treated.

In the case of Abraham Bernstein, who sued Dr. George F. Suker of Chicago for \$10,000, alleging that he had been made blind through an operation performed by the defendant two years ago, the court instructed the jury that there was no case against Dr. Suker, who, the evidence showed, had treated the plaintiff gratuitously for two years, as a result of which the man's sight had slightly improved.

Gov. Charles S. Deneen has appointed Dr. John C. McNally, formerly president of the Illinois State Medical Association, as a member of the State Board of Charities. Dr. Frank Billings has been appointed president of the board. The appointment of these two well-known members of the medical profession of the state insures a fearless and energetic board, to which the management of state charitable institutions can safely be intrusted.

The coroner of Cook County, in his annual report, shows that 3,482 cases were investigated in his office since Dec. 1, 1904. Of this number, 1,185 deaths were from natural causes and 453 were suicides. Of the latter, 159 died from gunshot wounds, 83 from asphyxiation, 11 by jumping from heights, 20 from drowning, 2 from setting fire to clothing, 26 from cutting or stabbing, 6 from jumping under trains, 43 from hanging and 103 from poisoning.

The North Central Illinois Medical Association held its thirty-second annual meeting in Streator, December 4. The following officers were elected: President, Dr. James J. Pearson, Pontiac; vice-presidents, Drs. Edgar P. Cook, Mendota, and Edward S. Murphy, Dixon; secretary and treasurer, Dr. George A. Dicus, Streator; censors, Drs. Franklin A. Turner, Sandwich; John M. Kaiser, Somonauk; James A. Marshall, Pontiac; Roy Sexton, Streator, and Joseph I. Knoblauch, Metamora.

Dr. Charles Eaton Phillips took the civil service examination for a position for the Panama service and received the highest mark of any physician from Illinois and the fifth place in the examination. He expects to leave for Panama about the first of February. The position pays a salary of \$3,000 per year, with two months' leave of absence. Dr. Phillips is a graduate of the College of Physicians and Surgeons of Chicago and has been in practice in St. Charles for a number of years.

In the case of the Illinois Medical and Surgical Institute vs. George H. Hartley of Rosecrans a verdict in favor of the defendant was rendered. Hartley was led to sign a note for \$150 over a year ago upon the promise of the managers of the so-called "institute" to cure him of deafness of long standing. As the note was unconditional, the holders sued for the face value. The jury decided in fifteen minutes that the note had been secured in an irregular manner. It is reported that many other Lake County farmers have been victimized in a similar manner.

At the annual meeting of the Children's Hospital Society, Dr. Frank Billings was re-elected president and Dr. Frank S. Churchill was elected secretary. The president in his address announced that since the organization of the society beds in children's wards in various hospitals of Chicago had increased from 290 to 450. It was proposed to establish tent sanatoria in all the small parks for the children of working mothers, where specially prepared milk might be obtained. The most important work for the society just now is to arouse public interest in the proposed children's hospital for infectious diseases.

Notices have been sent to 3,800 physicians of Chicago by the Department of Health, calling attention to the new law which provides that every physician who attends any person having a contagious or epidemic disease, such as cholera, yellow fever, scarlet fever, diphtheria, typhus, typhoid fever, smallpox, varioloid, puerperal fever, membranous croup, measles or whooping-cough, shall report cases within twenty-four hours, giving the name of the patient and a description of the disease. A fee of 10 cents is allowed for every report and a penalty of from \$10 to \$200 may be imposed for failure to obey this law.

The annual report of the State Board of Health, presented to Governor Deneen the first of the year by Dr. James A. Egan, secretary of the board, shows that during the year 1905 there have been in the state about 65,000 deaths and 150,000 births. In the birth record, males exceed females by about 6,000. Consumption leads as the cause of death, pneumonia and heart disease being second and third. Smallpox has not been as prevalent as in the immediately preceding years. Diphtheria, however, has prevailed to a greater extent, and at one time during the year was epidemic in 150 cities and villages in the state. The board examined and licensed 850 physicians during the year.

E. M. Harrison, who holds a diploma issued in 1903 by the now defunct Dunham Medical College, has begun action against the State Board of Health in the Circuit Court of Cook County to compel the board to issue him a certificate without examination: The action is based on

Section 2 of the medical practice act, which provides that the board may issue certificates to graduates of Illinois medical colleges in good standing without examination. The attorney-general in 1899 held that "may" in this instance must be construed as "shall." On December 12 Judge Chytraus denied the writ of mandamus and held that it is discretionary with the board whether certificates be issued under this provision.

Several years ago the State Board of Health brought suit against Dr. Peter R. Langdon, who had practiced in Kankakee for many years, but who holds no certificate from the state board. Dr. Langdon contended in his defense that the law does not apply to him, inasmuch as the law states that "no person shall hereafter begin the practice of medicine, etc.," while he contends that he did not begin practice after the passage of the law. He was sustained in this position by the Circuit Court of Kankakee County, and on appeal by the State Board of Health the Appellate Court affirmed the decision of the lower court. This case is now pending in the Supreme Court, and the board is hopeful that the decision of the Appellate Court will be reversed.

The State Civil Service Commission will hold an examination this month for attendants in the seven hospitals for the insane. This examination will be open to women between the ages of 18 and 45 years and to men between 22 and 40 years. The subjects on which applicants will be examined and the weights or basis of marking will be: Common school requirements, 3; physical examination, 4, and oral examination as to qualifications, 3. The examining board consists of Dr. Harry G. Hardt, assistant physician at the Illinois Northern Hospital for the Insane, Elgin; Dr. Herbert A. Potts, assistant physician, Illinois Central Hospital for the Insane, Jacksonville, and Miss Nellie Fitzgerald, head nurse, Illinois Eastern Hospital for the Insane, Kankakee.

James Ferdon, an itinerant vendor of medicines, who advertises himself as "Brother Paul," has brought suit in Cook County against the State Board of Health to recover \$100 held by the board. He made application for an itinerant vendor's license and tendered the fee of \$100, which was accepted by the secretary of the board. The application was referred to the board and declined. In the meantime he began operations in Freeport, using the receipt of the State Board of Health as his evidence of authority. Suit was brought against him by the board and fines of \$1,800 and costs found against him. Ferdon left the state and went to Iowa, where, on information given by the Illinois board, action was taken against him by the Iowa Board of Medical Examiners. Ferdon then brought suit to recover the fee of \$100 which the State Board of Health holds as a partial offset of the fines assessed against him.

The law firm of Peck, Miller & Starr, in behalf of Dr. A. K. Steele, has filed a bill before Judge Mack in the Circuit Court of Cook County, asking him to settle a dispute among the directors of the West Side Hospital, 819 West Harrison street, regarding the presidency of the institution. The bill alleges that at the meeting of the stockholders on January 10, a dispute arose regarding the election of two directors to take the place of members of the board whose time had expired. It is said that Dr.

T. A. Davis, who was chairman of the meeting, declared the meeting adjourned until April 11. After the meeting the board of directors was called together and Dr. Davis was elected president, George W. Newton treasurer and William L. Noble secretary. The attorneys for the complainant asked the court to enjoin the defendant from interfering with the business of the hospital, also that Dr. Steele be declared the president of the hospital association.

On December 12 the Tent Colony for the Treatment of Tuberculosis, Ottawa, was formally dedicated. Dr. Frank Billings, Chicago, made the principal address, in which he told the latest decision of science regarding the treatment of tuberculosis and eulogized Dr. James W. Pettit for his work in the cause of humanity. Two years ago the State Medical Society authorized Dr. Pettit to make this experiment at his own expense. In closing, Dr. Billings said the greatest work that Dr. Pettit has done has ben to humanity in general by setting a great living example of right living to all the world, and "these things I say not in flattery, but in envy of the great work that Dr. Pettit has been permitted to do at a great sacrifice to himself." Dr. George A. Zeller, superintendent of the Illinois State Hospital for the Incurable Insane, Bartonville, in his address praised Dr. Pettit for reducing the per capita cost for the care of tuberculous patients and stated that the modern method of treating tuberculosis was being followed as far as possible in the state institutions. A buffet luncheon was served at the clubhouse and public exercises were held in the pavilion.

Dr. Charles J. Whalen, commissioner of health for Chicago, requested the Chicago Medical Society to appoint a committee to investigate the methods of keeping and classifying the vital statistics of Chicago, with the authority to report any defects and suggest practical remedies therefor. Dr. C. S. Bacon, president of the Chicago Medical Society, appointed upon this committee the following well-known members of the local profession: Prof. A. C. Cotton, Rush Medical College, chairman; Prof. N. S. Davis, dean Northwestern University Medical School; Dr. Adolph Gehrmann, College of Physicians and Surgeons; Dr. Ludvig Hektoen, director Memorial Institute for Infectious Diseases; Dr. George W. Webster, president Illinois State Board of Health; Dr. Weller Van Hook. professor of surgery Northwestern University Medical School, and Dr. J. Allen Patton, assistant professor materia medica Rush Medical College. The committee, after carefully investigating the records of the Chicago Board of Health, submitted its report to the council of the Chicago Medical Society, indorsing the method of keeping the vital statistics and commending the work of the department.

The summary of the Chicago Health Department for 1905 shows that the death rate for the year was 13.67 per 1,000. Compared with the death rate of other cities of more than half a million inhabitants, the report states that the death rate of Chicago is 9.4 per cent. lower than that of St. Louis; 20.7 per cent. lower than that of Philadelphia; 21 per cent. lower than that of Boston; 25 per cent. lower than that of New York, and 26.9 per cent. lower than that of Baltimore. The death rate of Chi-

cago is also shown to have progressively decreased by decades since 1845 as follows: 40.52, 23.86, 24.11, 20.41, 20.06 and 14.98. During the year 546 cases of smallpox were treated at the Isolation Hospital, with 61 deaths. The typhoid fever death rate was the lowest on record, and more than 90 per cent. below that of 1891. The mortality from diphtheria decreased from 13.7 per 10,000 in the decade ending 1894, and 4.9 in the decade ending 1904, to 2.1 per 10,000 in 1905, a reduction of 84.7 per cent. from the rate of the decade prior to the introduction of the antitoxin. Pneumonia caused 552 fewer deaths in 1905 than in 1904, a decrease of 15.9 per cent. as compared with the previous year. Only three chronic diseases showed increase: Bright's disease increased 5.9 per cent.; cancer, 2.93 per cent., and heart disease showed an increase of only 50 more deaths than in 1904. Pneumonia lcd in the dcath causes with 3,582, followed by consumption, with 3,203; acute intestinal diseases, with 2,570; heart diseases. with 2,110; Bright's disease, with 2,017; violence, with 1,638; cancer, with 1,191, and nervous diseases, with 1,093. Diphtheria caused 426 dcaths; measles, 231; whooping cough, 359; scarlet fever, 79; smallpox, 61; typhoid fever, 329, and yellow fever, 1 death.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of December, 1905, the following members of the Illinois State Medical Society became members of the American Medical Association:

Bruce, W. W., Casey.
Baker, W. E., Chicago.
Brawley, F. E., Chicago.
Brouilett, R. J., Chicago.
Bumstead, C. M., Monticello.
Bowe, Edward, Jacksonville.
Cochran, W. A., Danville.
Cunningham, J. S., Des Plaines.
Colehour, S. P., Mt. Carroll.
Darling, U. G., Chicago.
Donaldson, C. O., Dwight.
Eldredge, R. L., Frankfort.
Fithian, P. H., Fithian.
Feingold, Leon, Chicago.
Fitzgibbon, G., Chicago.
Hand, H. W., White Hall.
Hale, J. I., Anna.
Hogan, T. A., Chicago.
Headland, J., Galva.
Hohmann, W. D., Kewance.

Katz, B. G., Chicago.
Murfin, W. W., Patoka.
Murfin, J. W., Vernon.
Mai, H., Chicago.
Mackechnie, H. N., Chicago.
Morton, J. B., Ridgefarm.
McCabe, L. C., Chicago.
Patera, Edward, Chicago.
Parkes, C. H., Chicago.
Rainey, G. S., Salem.
Redmond, T. B., Danville.
Rezanka, G. W., Chicago.
Rees, O. H., Ogden.
Stupnicki, M. J., Chicago.
Stackable, W. H., Chicago.
Stackable, W. H., Chicago.
Tieken, J. D., Piper City.
Tunnicliff, Ruth, Chicago.
Walker, H. W., Grantsburg.

MARRIAGES.

WILLIAM G. REEDER, M.D., to Miss Maude Van Heusen.

JOHN L. SWEENEY, M.D., to Miss Elsie F. Weeks, both of Chicago,
November 15.

WILLIAM N. SENN, M.D., to Miss Margery L. Lynch, both of Chicago, January 3.

Francis Duncan, M.D., Chicago, to Miss Ida Estella Utley, of Oak Park, December 24.

Charles S. Scaggs, M.D., to Miss Nellie E. Dare, both of East St. Louis, December 24.

SAMUEL T. GLASFORD, M.D., to Miss Marie Clark, both of Danvers, at Peoria, November 29.

Moses Eisenstaedt, M.D., to Miss Blanche Janette Benjamin, both of Chicago, December 18.

MERLE FLENNER, M.D., Hamilton, Ohio, to Miss Adrienne Nosler of Chicago, December 12.

EDWARD T. ALFORD, M.D., Chicago, to Miss Bess Williston of Manchester, Iowa, January 17.

Arthur Walters, M.D., Springfield, and Miss Blanche Stockdale, of Denver, Colo., Dec. 20, 1905.

CHARLES H. ZORGER, M.D., Ivesdale, Ill., to Miss Anna Cecelia Sunderland of Urbana, November 28.

Jay A. Hogan, M.D., Bartonville, and Miss Orna Hargrove, of Xenia, at Chicago, Jan. 15, 1906.

W. EDWARD SHALLENBERGER, M.D., Chicago, to Miss Elizabeth Mc-Intyre, at Bloomington, Ill., December 21.

RICHARD S. MANLEY, M.D., to Miss Alice Huges, both of Mount Carmel, December 28. The groom is the son of Dr. and Mrs. P. G. Manley of Mount Carmel.

DEATHS.

Francis Rowan Webb, M.D., Chicago Medical College, 1875, died at his home in Chicago, December 7, from pneumonia, after a short illness, aged 54.

HERMAN JOSEPH HUYETT, M.D., Jefferson Medical College, Philadelphia, 1885, dicd at his home in Rock Island, Ill., from nephritis, December 10, aged 43.

DR. G. L. ROBEY, of Sigel, Shelby County, died Jan. 23, 1906, aged 77. Dr. Robey was three times married and was the father of twenty-three children. Two wives and fifteen children survive him.

James Fullerton, M.D., Years of Practice, Illinois, 1878, one of the oldest practitioners of Mason County Ill., died at his home at Bath, where he had practiced for fifty-two years, December 6, from senile debility, aged 77.

Dr. William D. Powell, Mackinaw, Jan. 23, 1906, aged 43. Dr. Powell died suddenly while hunting. He was chairman of the Republican Tazewell County Central Committee and had been postmaster for a number of years.

Francis Duncan, M.D., Rush Medical College, Chicago, 1900, a member of the American Medical Association and a promising young physician of Chicago, died suddenly from heart disease at San Diego, Cal., January 2, aged 30. He had been married only ten days before.

ROBERT W. STEGER, M.D., Vanderbilt University Medical Department, Nashville, 1877, formerly of Chicago, and since September last a resident of New York City. died in Bellevue Hospital from the effects of morphin and chloroform, taken with suicidal intent, January 10, aged 48.

EMIL C. Brendel, M.D., University of Erlangen, Germany, 1853; for many years a practitioner of Springfield. Ill.; surgeon of the Eightysecond Illinois Volunteer Infantry in the Civil War; eminent as a scientist and entomologist; died at his home in Cedar Rapids, Iowa, January 6, after a long period of invalidism, aged 72.

THOMAS BENJAMIN HUNT, M.D., University of Louisville Medical Department, 1864; for nine years a member of the Board of Education of Warsaw, Ill.; once a member of the State Board of Health; surgeon of the Fifty-fourth Kentucky Mounted Volunteer Infantry; died at his home in Warsaw, November 17, from heart disease, after a short illness, aged 74.

WILLIAM FRIEND. M.D., Years of Practice, Illinois, 1877; a member of the American Medical Association, Illinois State Medical Society and Lawrence and Wabash County medical societies, and several times president of the latter organization; for forty-seven years a practitioner in Lancaster, Ill.; from 1868 to 1872 a member of the State Board of Equalization; died at the home of his son in Sumner, Ill., December 4. from cerebral hemorrhage, aged 77.

THEODORE J. BLUTHARDT, M.D., Chicago Medical College of Chicago. 1861; assistant surgeon in the First Illinois Volunteer Cavalry during the Civil War; county physician of Cook County from 1866 to 1869 and from 1880 to 1888; a member of the Board of County Supervisors in 1869 and president of the board in 1870; in 1872 a member of the Board of Education and superintendent of compulsory education; United States consul at Barmen, Germany; died at his post in that city, January 15, aged 68.

August F. Lemke, M.D., Medical Department of the University of Illinois, Chicago, 1895, of Chicago, a member of the American Medical Association, Illinois State Medical Society, Illinois Association of Military Surgeons, Chicago Medical Society, Chicago Pathological Society and other scientific organizations; interne in Cook County Hospital in 1895-1896; pathologist to the Illinois Eastern Hospital for the Insane until 1898; assistant surgeon of the Third Illinois Infantry, U. S. V., in the Spanish-American War, and afterward captain and assistant surgeon Illinois National Guard, assigned to Third Infantry; associate professor of medicine in the College of Physicians and Surgeons, Chicago; at times on the staff of Cook County Hospital, Mercy Hospital and other institutions; a pathologist of great promise, who was obliged to leave Chicago on account of ill health in October, 1904; died at his home in Pasadena, Cal., January 6, from sarcoma of the face and neck, aged 32.

COUNCIL ON PHARMACY AND CHEMISTRY.

The following preliminary report of the Council on Pharmacy and Chemistry is reprinted from The Journal A. M. A.:

To the Council on Pharmaey and Chemistry of the American Medical Association:

In response to the request of your chairman, we have investigated the belowmentioned preparations and report as follows:

AMMONOL.

According to the analyses of the contents of the original sealed packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

Acetanilid

Sodium Bicarb. 25.

Ammonium Carb. 20.

50.

ANTIKAMNIA.

According to the analyses of the contents of the orginial sealed packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

> Acetanilid 68.

Caffein

Citric Acid 5.

Sodium Bicarb.

KOEHLER'S HEADACHE POWDERS.

According to the analyses of the contents of the original sealed packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

> Acetanilid 76.

Caffein 22.

ORANGEINE.

According to the analyses of the contents of the original scaled packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

Acetanilid

Sodium Bicarb. 18.

Caffein 10.

Other constituents said to be present were not determined.

PHENALGIN.

According to the analyses of the contents of the original sealed packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

Acetanilid

Sodium Bicarb. 29.

Ammonium Carb. 10.

Certain packages of phenalgin were purchased which on analysis did not show ammonium carbonate.

SALACETIN.

According to the analyses of the contents of the original sealed packages as purchased, this was found to be a mixture and to contain the following ingredients approximately in the proportions given:

Acetanilid 43.

Sodium Bicarb. 21.

Sodium Salicvlate. 20.

Respectfully submitted,

J. H. Long, M.S., ScD., W. A. PUCKNER, PH.G., H. W. WILEY, M.D., PH.D., S. P. SADTLER, PH.D., J. STIEGLITZ, PH.D.,

Committee on Chemistry, Conncil on Pharmacy and Chemistry of the A. M. A.

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No. 2

ORIGINAL ARTICLES

THE MEDICAL LIBRARY.*

CARL E. BLACK, M.D.

JACKSONVILLE.

Many medical societies, as well as individuals, have small collections of books and journals which they would like to place at the service of the profession if a practical working plan could be devised. The wave of public library building which, through the generosity of Mr. Carnegie, has been sweeping over the country will, in most instances, provide a suitable home. Even with this home, the library is a collection of dusty tomes unused and unknown. To make it "every day useful" is a problem to be solved by the small medical library. Huxley has wisely said that every proposition is ultimately a financial one. So it is with this one. The Morgan County Medical Society has a small library which was established in 1872, and by donation and purchase has grown until it now comprises about three thousand books and bound periodicals. Recently, through the generosity of one of its members, Dr. T. J. Pitner, three hundred and fifty new volumes have been added and others are promised. To devise a plan to give this library life and to bring the current medical literature ready for use to the hands of every physician in this country is the task undertaken by the librarian with the assistance of other members of the society. We believe we can make this a practical, useful library, with the best of literature on its tables and shelves, and with this literature so analyzed and indexed as to be daily accessible in actual practice. To do this requires co-operation. A society can do many things by co-operation which would be impossible for an individual. The first thing necessary was a librarian, in fact; always on hand to be of assistance to the searchers after the facts of knowledge; one who knows the books and journals and how to use them. It is a sad but true fact that few people know how to make practical use of a library. A year has been spent in presenting this matter to the colleagues, with the result that a fund of \$75.00 a month,

^{*}Being part of a report made by the Librarian of the Morgan County Medical Society at its Annual Meeting in December, 1905.

for twenty-four months (two years), has been subscribed to support and improve this library, and the work will begin Jan. 1, 1906. This fund is entirely subscribed by the members of the medical society, which has a total of less than fifty members. It is the purpose of those interested in this project to take twenty or more of the leading medical journals and to have these thoroughly analyzed and indexed each week, so that any member of the society desiring information on a given subject can be furnished with all the available references without the necessity of laborious search and offtimes painful disappointment. If these plans carry out, as they now promise to, it is my intention to place here my index of current medical literature, which will carry us back in some of the journals fifteen years and give the library at once over a hundred thousand references to the most recent medical literature.

Websier defines a library as "a considerable collection of books kept for use and not as merchandise." According to this definition, emphasis is placed on the usefulness more than on any or all other qualities of a library. That there has been a wonderful awakening in the matter of libraries, both private and public, both secular and scientific, is patent to every one. This awakening has not been sudden nor without long preparation. It has been coincident with more extended and thorough education. The library is a part of our educational system and is now generally so accredited. To the practical physician it is much more. The word "library" is so intimately associated with culture, progress and achievement that it is hard to conceive of one without the other. Bacon says: "Libraries are the shrines where all the relies of the ancient saints, full of true virtue and without delusion or imposture. are preserved and reposed."

Who is there who does not mourn the loss of the great Alexandrian Library, with its priceless treasures, and who is there that can say how much of the world's progress was impeded thereby? The great and many sided Virchow has truly said: "All scientific research is really literary." Who can read the history of the life and achievements of Virchow, of Darwin, of Pasteur, of Cohn, of Broca, of Hulings Jackson, of Gross, of Pepper, of Osler, of Davis or of Senn without realizing the truth of Virchow's assertion. They were scientists, they made experiments, they studied their cases, they were practical every-day practitioners of medicine and surgery, with few exceptions, but above all that and more than all that they were students of the literature of their profession. They read the great masters, they followed them, they learned them, and only by their aid were they able to write intelligently, interestingly and profitably. The colleagues we love most and who appeal to us most are those who know the history of their profession best. It is only through the library, through the books and periodicals which form our libraries, that we can know the history of our profession and the signs and progress of our times. Books and periodicals grouped together constitute libraries. Osler says: "It is hard for me to speak of the value of a library in terms which would not seem exaggerated. Books have

^{1. &}quot;Value of a Medical Library to the Community," by David I. Wolfstein, Medical Library and Historical Journal, July, 1905.

been my delight these thirty years and from them I have received incalculable benefits. To study the phenomena of disease without books is to sail the uncharted sea, while to study books without patients is not to go to sea at all. To be of real value there must be a general and continuous use; the books must be made available and their use attractive. What exsuccous attenuating offsprings books would be but for the pabulum furnished through the placental circulation of a library."

There is little doubt but the "love of study" and the "desire for knowledge" is the power which attracts most men into medicine. How, then, are we to foster and cultivate this spirit throughout the medical career? Dr. Spivak has pointed out that "the medical school course is merely preparatory for what is to follow. Real knowledge of the science and art of medicine is postgraduate. Private practice is the first institution, a teacher grim and morose, but of the highest order if one only knows how to take advantage of its chastising lesson. Hospital practice is an institution wherein instruction is more systematized, the observation more certain and the results better noted. * * * Medical societies are valuable means of educating, fostering and encouraging thought, but they have their drawbacks, the stated meeting that one is unable to attend, the subject that one is obliged to listen to, in which he is not interested, the idle and empty discussions from which there is no escape even in the best societies. There is but one grand institution that stands above all, that has all the virtues and none of the defects of those enumerated, and that is the library. On this shelf is my physiologic laboratory. on the other my biologic institute, here is my anatomic theater, there my lying-in hospital. The records of medical progress, thousands of clinical reports, the teachings and the research of the best medical minds of all times and all places will be found in the medical library and there available to every student."

Let us consider for a moment the relation of the medical library to the community in which we live. This relation, of course, is entirely enveloped in the medical man himself. The members of the community expect when they call on the doctor for services that they will receive a correct diagnosis of the case, and that the case will receive the most approved treatment known to the medical profession. Thus we see the responsibility which confronts the doctor on assuming charge of any one sick or suffering. How far do we fall short in our daily practice of furnishing to our patient what he expects? Is he unreasonable in his expectations, in fact, have we not taught him to expect so much, and, if we have taught him to expect these things, and if he has the right to expect them, what shall we say of ourselves when he is Have we made every effort available? Have we mastered what the masters have to teach us of the disease we assume to treat? Are we able to say that our diagnosis is as correct and our treatment as appropriate as the great teachers available to us in our literature can teach us to make them? Or are we shifting along with a smattering of knowledge which is continually leading us astray and filling the cemeteries with monuments which silently, but truly, commemorate our lack

of easily available knowledge? The people know something of the medical schools and their facilities and of the medical books and their qualities and of the medical journals and their progress. If we have made full use of all of these agencies for completing and perfecting our knowledge of the profession which we practice, we have no just cause to sorrow should we fail to meet the expectations of a patient. Too often it is plain that such effort at securing information has not been made. The community is interested to know whether, as medical men, we are making full use of these various agencies for keeping abreast of the times, which will enable us to bring to the sick child or ailing mother the very best in medical progress. We should not rest satisfied with less. We all know full well that the best is none too good.

The practical question which confronts all of us, and especially those who have become busy in the actual work of every-day practice, is how to find the necessary time to keep abreast of the times. How do the new things in diagnosis and treatment get before the members of the profession? Medical progress begins with the experiments and observations and deductions of individuals. These experiments and observations with their practical suggestions, are usually first presented to some medical society. They next appear in the transactions of such society and in the medical journals. Here they are discussed by the medical profession at large, and, if they are worthy, they live and shortly find their way into our medical books. He who depends on medical books will always be a little behind the one who depends on the current medical literature. He may be safer from trying unapproved theories, but will miss the initial inspiration of progress and will be delayed in accepting many a new plan of treatment or method of diagnosis.

One of the most pressing questions, in my judgment, is how to make the great mass of journal literature coming to our desks available for daily use. Books and journals are the most important instruments in the armamentarium of any physician. All the other instrumentalities which he possesses are insignificant compared with these. If this is true, and I do not believe it can be successfully controverted, then the practical every-day question before us is, How can we get the most use out of our medical literature? Any one who frequently visits the offices of other physicians, as has long been my privilege to do, will be struck with two facts. The average physician subscribes for comparatively few medical journals, and those journals which are taken are scanned when received and then thrown in a corner or piled in a closet in the utmost disorder to be of no further use excepting for fire lighting. A few physicians put them on shelves in sightly bindings, but their substance is still far from accessible. This certainly is not as it should be. These journals contain all that there is of medical progress. When one wishes to write a treatise on a given subject, he searches the current literature for the progress of that subject; therefore, when one wishes to apply to a case the most approved, modern and up-to-date treatment he should have some plan by which he can conveniently, expeditiously and thoroughly consult the most recent and up-to-date current medical literature.

It is hoped that, by the plans inaugurated, this library will become a live, active agency for good to us all in our daily work; that, by this plan of co-operative library work, each one can do more work and do it better. Incidentally, this library, which will start on its new campaign with over 2,500 volumes of good and useful books, is one of the most potent forces for maintaining the permanency and stability of this society. It is real tangible property which is now to assume an earning value. These earnings will be invested in its members who will be glad to return a good interest to be invested for the use of the generations to come. It is to be hoped that each member will contribute to this plan and will avail himself of its help and influence.

ANGIO-ENDOTHELIOMA OF THE MIDDLE EAR.

WITH REPORT OF A CASE.

JOSEPH C. BECK. CHICAGO, ILL.

Tumors of the middle ear are not very extensively treated of in our text-books. Aural polyps are usually the one growth that one finds described more extensively than any other, with not much said as to the pathology, which is of some interest. The various kinds of tumors that may arise from the middle ear are manifold, as one may find the three embryonic structures here represented. Greenock, in the Ergeb der Allg. Pathologie, in 1902, says that Bruehl and Goerke have the proper idea as to the classifications and pathologic diagnosis of tumors of the middle ear, which is briefly as follows: 1. Malignant, sarcoma and carcinoma; 2, non-malignant, mucous polyp, and fibrous polyp. the other varieties that are mentioned by the various authors are nothing more or less than changes going on in the various component parts of a polyp, so, for instance, a fibro-angioma is an increase in fibrous tissue, and the formation of blood vessels in an inflamed polyp. Goerke, in examining over a thousand cases of ear polypi, has never found in the ear a true myxoma, such as one finds in the nasal cavities. These views are not upheld, however, by all authors. Moos and Steinbrügge have found four cases of true myxoma, and Weidner has seen a true angioma, with new formations of blood vessels in middle ear tumors. The specimen of this case shows distinctly the new formation of endothelial cells and vessels, without the slightest indication of inflammation, except at the point where the tumor was severed at the first operation. I have been able to collect in the literature a large number of tumors arising primarily in the middle ear, which follow in the bibliography. Senn, Warner and Ziegler classify the endotheliomata among the malignant growths.

History of Case.—Mrs. Edna M., aged 23, married. Family history: Father and mother in good health; one sister had her tonsils removed two years ago, followed by excessive hemorrhage, necessitating the ligation of the common carotid. Childhood history: Measles, whooping-

cough, numps, tonsillitis, from the second to the twelfth years; at this age had tonsils removed, comparatively little bleeding. Diphtheria at fourtcen. Acute bronchitis and general neuritis at sixteen. She has never had a discharge from her ears so far as she knows. There is no specific history. At age of nineteen, slight deafness in the left ear, associated with some pain, and a noise distinctly simultaneous with the heart beat, this increasing to a marked degree. At the age of twenty-one consulted Dr. Cartwright, who told the patient she had a tumor in her left ear and referred patient to mc on Dec. 3, 1904.

Examination.—Test of hearing: Right ear, for the whisper, watch, forks and whistle, negative. Left ear, whisper, one foot; watch, on contact; negative Rinne, and Weber to the left. Nose and throat negative; right car normal; left ear, a growth fills out the whole canal and can be easily seen at the outer meatus; has a bluish-gray appearance; is not painful to the touch, and is covered by a thick layer of epithelium. trying to see where the attachment may be by means of a blunt probe, I found this to be extremely painful, and resulted in free bleeding. agnosis, aural polyp of unknown nature. I recommended its removal, to which the patient consented. Using local anesthetic, composed of cocain, menthol and carbolic acid in equal parts, I found it impossible to apply the instruments, owing to the extreme hypersensitiveness of the patient, and therefore recommended her to take a general anesthetic, which she consented to do. This was done two days later, the patient having been properly prepared in the meantine, and further examination made as to the general condition, which was found to be normal in every respect, except some laceration of the perineum and cervix following childbirth. Urinary examination negative.

Operation.—A blunt-pointed probe found the growth to be firmly attached anteriorly and about one inch from the external meatus. Bleeding following this procedure was considerable. I applied rapidly a Blake's polyp snare, and removed a part of the tumor the size of a pea. This was followed by a hemorrhage, such as one finds in opening the jugular or lateral sinus. I wish to make this one point, of interest in connection with the pathology of this growth. I was unable to continue the removal of any more of the tumor, because after repeated packing and trying the various methods of stopping the hemorrhage, it would always start afresh and as violently as at first. Consequently, I packed the ear firmly with the aid of external compression; put patient to bed. The microscopic examination of specimen was made by Professor Evans of the Columbus Laboratories, who found it to be a very vascular tumor with many small cells, possibly sarcoma. However, the statement was made by Dr. Evans that the specimen appeared to be more firm and showed many new vessels. The condition following this operation was as follows: A slight facial paresis was observed on the second day, and on the removal of the compression free oozing again resulted, which required repeated compression. On the fifth day, when we were able to dispense with the compressing bandage, the paresis gradually receded, and we

came to the conclusion that this slight paresis was due to the external compression. However, patient declared that she had had a slight paresis about a year before.

Owing to the results of the microscopic examination, I made a proposition to the patient to do a radical operation, to which she consented, and re-entered the hospital about a month later. During this time, Dr. Henry Wagner of San Francisco was visiting in Chicago, and saw the case with me, concurring in the diagnosis and indication for radical operation. He suggested to me the use of gelatin foods preliminary to this operation, as he said he had success in lessening thereby the tendency to bleeding in similar conditions. I mention this incidentally, to show that it had no effect in the operation that followed.

Jan. 21, 1905, under general anesthesia, the radical operation was performed, with very little difference in the steps from that performed in chronic suppuration of the middle ear. I was very careful not to open into the membranous portion of the external canal until the very last step, owing to the bleeding that I knew would follow this procedure, and would obscure the field of operation. Again, I wish to make the point about the bleeding tendency in this patient, in that from the moment the skin was incised back of the auricle there was constant uncontrollable oozing from every cut and chiseling of the bone. There was no evidence of disease in the mastoid cell; in fact, everything appeared normal until I removed the external wall of the additus and the little bridge before reaching the attic. I then rapidly slit the membranous portion of the canal and exposed the growth, which measured about half an inch in length and one-fourth of an inch in thickness, being attached to the anterior wall of the middle ear. With a dull scoop I delivered the tumor, and Dr. Wagner, who examined it, declared that it was encapsulated. I thoroughly scraped the surface where the tumor was attached, completed the operation, draining in both directions through the canal and retro-auricularly. The patient made an uneventful recovery, but the wound was very slow in healing, as the posterior opening would bleed very frequently on the least provocation, and became extremely sensitive.

Microscopic examination of tumor removed at the second operation. Made by W. A. Evans of Columbus Medical Laboratory.

This is a mass of connective tissue covered by stratified squamous epithelium. The epithelium is negative and can be disregarded. The underlying tissue is composed largely of blood channels. In certain of these there is partial or complete filling of the lumen with proliferated endothelial cells. The wall of the channels, except for the endothelium, shows some inflammation, but otherwise is negative. The endothelium forms plugs in some areas. In others there is little or no hyperplasia. We think it what is called an angiomatous polyp with endothelioma tendencies. We regard it as probably benign.

About three weeks following the operation, I noticed the facial paresis recurring and gradually increasing, so that in May the paralysis was

complete. Since there remained a posterior opening, and there appeared to me to be some remains of the tumor on the inner wall of the middle ear. I decided to close the posterior opening by the usual plastic method, and at the same time remove the tissue spoken of above. These scrapings were again microscopically examined and found to be made up of granulation tissue. The wounds healed, as you can see by examination of the retro-auricular incision, as well as a thorough epidermization of the external auditory canal; however, not a smooth, large canal, it being dissected by bands of adhesions, making an external large cavity and a small channel leading toward the Eustachian orifice. The patient's general condition has markedly improved since this last operation, and the hearing is now increased to whisper at 10 feet; watch, at 6 inches.

The one question that I wish particularly to call attention to in this case is the facial paralysis, which is not improving, and which I must consider as complete. I have decided to a neuroplastic operation on this patient in the very near future and unite the facial nerve with the hypoglossal, as particularly recommended by Rothmann, Nicoll and others, and would be very glad to receive some suggestions and opinions concerning this procedure. I mention the hypoglossal particularly, having decided not to take any chances on doing the operation of uniting the facial with the spinal accessory, since these reports seem to indicate a bad aftereffect, such as associated movements between the shoulder and the face.

THE PRESENT STATUS OF OTOLOGY.

J. Holinger, M.D.

The chapters of otology which have advanced the most in the last two decades, are pathology and diagnosis. For acute and chronic suppurations of the middle ear, they have reached such a degree of development that our therapeutic actions are clearly outlined as to indications and contraindications for and against different forms of conservative treatment or different typical operations. Whoever acts against these well-established rules has to bear the consequences. Whoever operates, for example, upon an acute exacerbation of an old chronic suppuration with cholesteatoma by simply draining the mastoid cells and letting the wound close again, as in acute suppurations, is bound to have recurrence. Whoever chisels open the head of every patient with acute otitis, whose mastoid process is a little tender for a short time, will do damage to his patient, to himself and to the profession.

We were, however, totally at sea as to pathology, diagnosis. prognosis and therapy, in the greater number of cases of deafness without suppuration. The text-books enumerate and subdivide different types of these diseases and give prognosis and treatment for each, but how much it all amounts to is shown by the words of a well-known St. Louis otologist, who said: "Once in a while we have splendid results in those cases, but in others, apparently identical ones, all our endeavors are worthless, the patient, even while we treat him often, becomes more deaf every day." The literature consists mainly of

casuistic, clinical histories without postmortem or pathologic findings without clinical histories. Bezold, fifteen to twenty years ago, gave really far-reaching viewpoints. He was first criticized and finally nearly ignored, as, for example, in the well-known text-book of Politzer. His views were more strongly supported, the more microscopic anatomy and pathology were systematically worked out by Professor Siebenmann. The conclusions which those two authors draw are now generally accepted, because they are based upon large numbers of cases which were observed for long periods, repeatedly examined with tuning forks and finally posted and microscopically investigated in the most conscientious way. Many pathologic findings which were formerly considered very frequent causes of deafness, were revealed as rare and exceptional, and others took their place, which years ago simply could not be recognized on account of incomplete microscopic technic. What is meant by this last word may be illustrated by pointing to a few of the difficulties that had to be surmounted. A controversy was carried on for years as to the position of the membrana tectoria, a large and clumsy part of Corti's organ. It was proved that, in the living, this membrane laid flat on Corti's organ and that all other positions at different angles with this organ are postmortem changes, which set in at once. A temporal bone must be placed in a Müller formol solution at the latest six hours after death, if one wants to be sure that postmortem changes will not disturb the difficult picture of the labyrinth. But you will understand why the pathology of the labyrinth was developed so late and give the men who finally accomplished it so much more credit, if you consider that to open the skull of the corpse and take out the temporal bones requires from one and a half to two hours; that at least a part of the work, namely, the filing open of the semicircular canal, in order to let the fixing solutions enter the labyrinth, must be done by the pathologist himself. It is indispensable that a postmortem be begun two hours after death. Therefore, for many years, Siebenmann looked up the names of all the patients in the Burgerspital to see whether at some time or another they had been treated in his ear clinic. If those who had formerly been treated by him were afflicted with some fatal disease, he instructed the nurse to at once notify him of their death. Then, Sunday or week day, away from his office full of patients, or at night out of the warm bed, he hurried to his laboratory to make the necessary first preparations. After this decalcifying, hardening, fixing, etc., followed, with daily handling of the specimen for six to eight weeks before the specimen could be imbedded, cut, stained and mounted. Finally, a simple air bubble might make the whole work worthless. Neither paid help nor trained assistants were sufficiently reliable. But he succeeded in getting dozens and dozens, even hundreds of faultlessly cut and mounted middle and inner ears, which had all been repeatedly examined with tuning-fork tests. If one considers this vast amount of conscientious work, with thousands of little details, it is really painful to hear and read the superficial criticisms of the conclusions drawn therefrom. As to anatomy and physiology, this

most important fact was discovered, that the bony capsule of the labyrinth is as to its nutrition and function rather a part of the middle ear than of the inner ear. Its diseases must, therefore, be added to those of the middle ear. This discovery cleared up a number of disputable points of pathology and diagnosis.

A comparison of the text-books with this newer pathology show, first, that in acute inflammation of the middle ear, an isolated inflammation of the membrana tympani or acute myringitis hardly exists, but the mucous membrane of the drum cavity and of the mastoid cells is always implicated. Pus may gather in the cells and disappear without ever causing any symptoms. Second, an inflammatory hypertrophy of the mucous membrane, the otitis media hypertrophica, does not occur even after repeated acute inflammations, although the text-books have so much to say about it. One case of enormously hypertrophied mucous membrane in a man, who was deaf all his life, and died as the result of an accident, reported by Wittmack, is, as he admits, extremely rare and not due to an acquired inflammatory process, but a congenital anomaly. Third, dried-up masses of secretion, that some text-books describe as remnants of acute inflammation, do not exist in the middle ear with normal lining. Such masses are due to chronic suppurations with metaplasia of the epithelium, i. e., cholesteatoma. Fourth, adhesions of mallet and incus, either between themselves or with the walls of the middle ear, as results of acute inflammation, are very rare and have little influence on hearing. Acute inflammations of the middle ear have a strong tendency to restitutio ad integrum, with the exception of two forms. The first of these two is the one after scarlet fever; the second is the otitis media phthisica, which occurs only in the last stages of consumption, when the patient has no resistance against the disease. A few remarks may be added about chronic suppurations and especially their most frequent pathologic finding, the cholesteatoma. I spoke about this condition before the Chicago Medical Society for the first time ten years ago. One of the gentlemen in his discussion said that cholesteatoma and its complications were rare in this country. In contradiction to this, I may state the fact that within the last three months I operated upon ten ears for cholesteatoma. Three of the cases were complicated with septic thrombosis of the lateral sinus, the jugular bulb and vein. One of them died of meningitis. The literature abounds with similar cases, and still the afore-mentioned textbook of Brühl-Politzer gives only four pages and three out of the 283 pictures to pathology, chemistry, diagnosis, prognosis and treatment of this by far most destructive and fatal of all ear diseases. Other textbooks give it even less space. Its practical importance should entitle this disease to a separate chapter, where, besides a careful exposition of the differential diagnosis, the differential indications for conservative treatment and operation will be given. Under the head of chronic suppurations must be added that considerable work was done lately about tuberculosis of the midde ear. Tuberculosis is a more frequent cause of suppuration than was suspected.

^{1.} Z. F. O., vol. xlvii.

A few words must now be said about a disease of the middle ear, that is not due to inflammation, the spongifying of the bony capsule of the labyrinth. It must be added to the discases of the middle car, because the capsule is not a part of the sound-perceiving, but of the sound-conducting apparatus. Its pathology was worked out some time ago. It leads to ankylosis of the stirrup in the oval window. A number of authors tried to establish the inflammatory nature of this disease. Two points may be mentioned against this: First, there is no other inflammation of the bones which has similar microscopic pictures for its end product. Second, the beginning of the process is almost always between the eighteenth and twenty-second year, the end of the period of growth. It is very exceptional that a case can be traced back before the seventeenth year, or that the patient surely was normal up to the twenty-third year, and that the disease started later. These exceptions are so rare that they may be taken as supporting the rule. Now, I assert that no inflammation follows such rules, or is limited in its inception to such a narrow period in life. There is an inflammatory ankylosis of the stirrup in old suppurations which has nothing to do with this. I saw, among the great collection of Professor Siebenmann, a few other pathologic changes, which have so far no clinical interest, because they can not be diagnosed. They are mostly from very old people. New-formed membranes of the round window, which close up the niche entirely or partly; furthermore, new formation of connective tissue, the cells of which may become loaded with fat, so that real lipomata of the round window were seen.

The next chapter is the one on pathology of the labyrinth. Professor Dr. Siebenmann and his assistant, Dr. Oppikofer, created the greater part of it, and brought system into what was known before. Two years ago I worked for seven weeks in their laboratories and saw the complexity of their apparatus. Whole rows of microscopes were brought into use. High power, low power, pathologic, normal, thin slides, thick slides, cuts in different planes of the labyrinth had to be studied, drawn, photographed and compared, till finally some tiny little detail could be settled. I shall sketch a few of the main points. All changes are divided into acquired and congenital. The acquired diseases are located in the nervous elements. Exceptions to this rule are large destructions through necrosis and traumatism. The acquired changes, i. e., those of the nervous elements, show all different stages from acute neuritis to extensive degeneration into connective tissue. We find round cell infiltration of the cochlear and vestibular nerve or interstitial neuritis, diminution of axis cylinders and of the gangliar cells in the spiral ganglion and the end branches of the cochlear nerve or atrophy of the nerves. Parenchymatous as well as interstitial changes may be caused by general diseases, like typhoid fever, diphtheria, mumps, measles, scarlet fever, smallpox, whooping cough, pneumonia, erysipelas, sepsis, influenza, rheumatism, diabetes, myxcdema, marasmus and cancer, and finally by systemic general poison, like alcohol and nicotin, and by poisons which act mainly on the acoustic nerve, as salicylic acid and quinin. The semicircular canals are usually

intact. We find similar changes as in the cochlear nerve in the main stem of the acoustic nerve. The congenital changes are usually found in deafmutes, and are mainly confined to the membranous labyrinth. They consist in folding or plaiting of the stria vascularis, changes of different epithelia, changes of Corti's organ and of the aqueducts, absence of parts or of the whole of the labyrinth and even of the whole pyramid. Different groups and types are formed which will greatly facilitate further studies. All these investigations are extremely interesting. They were impossible up to late years, when first reliable methods to decalcify the bone, without injuring the fine structures within, were discovered. Of course, these works could not but help to have practical consequences. One of them was the complete change in the education of deaf mutes, of whom there are in Chicago alone more than a thousand. It is true that the systematic tuning-fork examinations of Bezold first brought the advance in that line, but pathology not only supported the empirical method, but led to discoveries which opened new roads. One of them was that it showed that real congenital deaf mutes, with very few exceptions, have much better hearing than those with acquired deafness, and after comparatively short training many may participate in oral instructions in the regular public schools.

The diagnosis of different forms of nerve deafness keeps step with pathology. The technic of the examination is not a very simple one, but whoever enters into its spirit can not withhold his admiration for its clear, logical construction. It enabled me to diagnose, for example, the syphilitic character of two cases of deafness with normal drum-head and Eustachian tube. One of them, a doctor, when I took his history, did not tell me a word about syphilis, but he was greatly surprised, when after the tuning-fork examination, I asked him when he had his chancre, and he reluctantly said fifteen years ago, but never had any symptoms since. The other one denied infection entirely, but under the pretext of giving him a tonic I gave K. I. Both improved to a point where they could hear a whisper at a distance of several feet, while before they could not hear a whisper at all and conversation only at three to four feet.

As a rule, however, to make a diagnosis, the history and other points must be duly considered. Experience has taught that whenever hearing is so far gone that a whisper can be heard only at a very short distance or not at all, it is impossible that the middle ear alone is affected. The nervous apparatus also must be involved. Combinations of affections of the middle ear and of the labyrinth are frequent, but how much of deafness is due to the middle ear and how much to the labyrinth is often difficult to decide. Our views of the function of the middle ear are of the greatest importance. Bezold says that the reception of the lowest sounds and their conduction to the labyrinth is the main function of the middle ear apparatus. In a paper on the physiology of the middle ear,² I have given the reasons for it. The main points upon which we base our diagnosis are these: If a patient with normal drum-head and normal conditions for

^{2.} Jour. A. M. A., Aug. 6, 1904.

air douche, hears a whisper at 3 to 5 m. instead of 20 m., and if he does not hear the lowest sounding tuning forks close to the car, but hears all forks well or better than normal, if they are set at any part of the skull nearest to the bone, then we are not mistaken if we locate the disease in the middle ear. The prototype of this form of the middle ear disease is the ankylosis of the stirrup. If, on the other hand, a patient, with normal drum-head and Eustachian tube, who hears whispers only at 3 to 5 m. instead of 20 m., hears all tuning forks, and especially the lowest ones, when, furthermore, the proportion of air conduction to bonc conduction is normal, but so that an "a" tuning fork, which to him has stopped sounding by bone conduction, can still be heard through the bone by a normal hearing individual, then we say the middle car can not be at fault. because the sound does not need to be conducted through the middle car, but goes just as easy directly to the labyrinth. The fault must lay in the perception, that is, we have a case of nervous deafness. To locate the disease more accurately, we consult the history and if we find that the patient suffers considerably from dizziness, we conclude that a part of the nervous system must be affected, where cochlear nerve and the vestibular nerve from the semicircular canals and ampulle are united; that is, in the main stem of the acoustic nerve. Furthermore, when the patient does not complain about dizziness, but when we find on examination with the whole series of Bezold's tuning forks that he hears some of them distinctly better, others worse or not at all, we know that the trouble can only be located in the last branches of the acoustic nerve; that is, in the cochlear nerve and in the cochlea. A number of publications from different clinics confirm the reliability of these diagnoses. I often had chances to observe typical cases of one or the other group. If you read a report of Dr. J. E. Sheppard of New York in the Lancet-Clinic of Oct. 14, 1905, of a case that he could not positively diagnose, you will easily recognize an acute neuritis of the acoustic nerve.

That therapy has profited largely is beyond a doubt. Who now would think of treating a patient with pneumomassage and pressure probe, and force him to come in a noisy car through the still noiser streets to a downtown office, when an acute neuritis of the acoustic nerve has been diagnosed? How much good will now be accomplished, not only in a therapeutic way, but in prophylaxis, if the full consequences are drawn of the fact that the acoustic nerve is extremely sensitive to noise during all serious general diseases. Many a case of deafness will be avoided if we keep the patient away from noisy street cars, electric bells, slamming doors, hammering radiators, etc.

This little sketch of the present status of otology was compiled from literature and especially from personal experience in the laboratory and clinic of Professor Siebenmann. I have inside information that within a few months an up-to-date text-book will appear, which will contain an elaborate presentation of this newer otology.

103 Randolph Street.

CONGENITAL CLUBFOOT.

Dr. John Ridlon and Dr. Charles F. Eikenbary. Chicago.

When the abstract of this paper was written for the Chairman, we contemplated discussing the varieties of congenital deformities of the feet, the anatomy of congenital equino-varus and the theories of causation of these conditions. So much space, however, has been taken up with the statistics of cases and the treatment of the common form of congenital clubfoot, namely, equino-varus, that it has seemed best to omit all anatomic and theoretic discussion and limit ourselves to the clinical facts and a consideration of the various methods of treatment.

STATISTICS OF DR. RIDLON'S CLUBFOOT CASES, BY DR. CHARLES F. EIKENBARY.

The cases here reported are meant to comprise all cases, of which I have been able to find any record, that have come under the observation of Dr. Ridlon during his thirteen years' residence in Chicago. Nearly all of the cases have been operated on in some one of the Chicago hospitals, a few have been operated on in other cities. It is a source of great regret that the hospital records of these cases are, in many instances, incomplete. In some cases the records fail to state whether the deformity was congenital or acquired. All such were rejected and do not appear in this paper. Only those cases known to have been congenital are reported. I am sure that more cases have been operated on than are here reported, and I am equally sure that the number of cured cases is greater than is here reported, since it is only reasonable to suppose that the cured cases would be less likely to report than would the relapsed cases.

SUMMARY.

O DILILITA I
Number of patients101
Double 66
Single
Total number of club feet
Equino-varus162
Calcaneo-valgus (in 3 patients)
Valgus 2
AGE.
Oldest case treated
Oldest case (not treated)

Forty-one patients were under 2 years.

Twenty-nine patients were between 2 and 7 years.

Six patients were between 7 and 14 years.

Six patients were over 14 years.

Age not known, 19 cases.

Boys, 60; girls, 34.

Sex unknown, 7 cases.

Number of cases showing complications, 7.

Complications are as follows: Constricting bands and amputated fingers; knock knees; no patella, congenital flexion deformity of both knees and congenital dislocation of both hips; no patella, congenital flexion, deformity of both knees and both clbows, clubbed hands, adduction of both shoulders, and congenital dislocation of both hips; out-knee, club hands, one toe missing; hydrocephalus; no patella, and congenital recurvation of both knees.

Tenotomy of Achilles was done in at least 62 patients; hand stretching in all. The osteoclast was used in 7 cases. The feet were torn open along line of Phelps' incision in 4 cases. In one case the foot was torn open on a line parallel to inner border of foot.



Fig. 1.—Hand-stretching. Correcting the varus.

RESULTS.

Final results known, 65. Final results unknown, 18. No operation, 9. Still under treatment, 9. Good results (known), 48. Fair results, 16.

Bad result, 1.

One case has since had Phelps' operation performed and family doctor reports perfect cure.

At least 10 cases relapsed and had to have secondary operation.

One case relapsed three times, but finally was almost perfectly cured.

At least 7 cases had bad results from previous operations by other surgeons.

One case was cured by daily hand stretching by the mother.

TREATMENT, BY DR. JOHN RIDLON.

Any routine method for the treatment of all cases of clubfoot is a mistake and must occasionally result in relapses and failures. But most of us are so constituted that we must treat all cases by our routine method until some cases do result in relapse or failure, and even then many of us will continue with the old routine, ascribing the relapses and the failures to neglect in the nursing rather than to fault in method. Theoretically, each case should be treated on its merits if we are to ob-

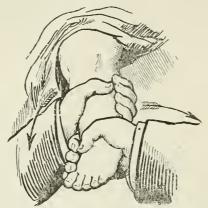


Fig. 2.—Hand-stretching. Correcting the equinus.

tain the best results, and, theoretically, every surgeon should be able to treat a case equally well by any method. But there are men who are afraid to perform even a minor operation, and there are others who very frequently get septic wounds. All such should content themselves with "bloodless surgery." There are others, and their numbers are not a few, who find the scalpel the simplest instrument with which to untie the Gordian knot of childhood and at the same time loosen the purse string of the parent. The laity can not get away from the conviction that the more blood the surgeon spills the greater is his worth in dollars. Some



Fig. 3.—The Thomas wrench.

years ago an eminent New York orthopedist admitted, in a discussion on the treatment of clubfoot, that it often took him from three to four years, at \$500 a year, to cure a case with braces. The general surgeon retorted that he preferred to cure the case at a single operation and take all the money the parents had at once. Of course, the orthopedist was wrong in thinking he could cure all cases by braces alone in three or four years, or any period of time, and the surgeon was wrong in thinking he could cure any case by simply operating on it. There are clubfeet that

can be cured by braces, provided the braces are used by men who know how to handle them and there are other clubfeet that can not be so cured. But there are no clubfeet that can be cured by simply operating on them.



Fig. A .- Using the Thomas wrench to correct the varus.

This brings us to defining a cured clubfoot. A cured clubfoot is one that has been straightened to approximately the normal form and has been made to remain permanently in that form without extraneous assist-

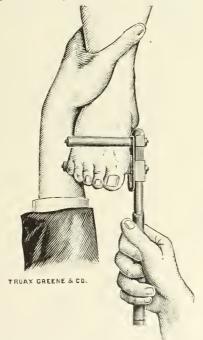


Fig. 5 .- Twisting the foot with the Thomas wrench

ance. In the straightening of a clubfoot by operation, "bloodless" or "bloody," the operation is simply a preliminary in the treatment of the case, as much a preliminary as scrubbing the foot is a preliminary in a

cutting operation. It is an essential preliminary, but it is still a preliminary. The cure only comes through skillful after-treatment. Every man who has operated on many clubfeet has had some relapses. I am sure he will agree with me that he would not have had these relapses had he held the feet for a sufficiently long time in the position he had them in at the completion of the operation. He, or some one, erred in

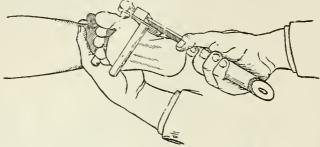


Fig. 6.—Correcting the equinus with the Thomas wrench.

judgment of how long a time was sufficient to warrant against a relapse. No operator will be willing to admit that he failed to correct the deformity by his operation; if, then, relapse occurs he must admit that the fault lay in inefficient after-treatment. There is another factor in the care of a clubfoot that appeals very strongly to the patient, namely, the function of the foot. The patient has a right to demand that the deform-

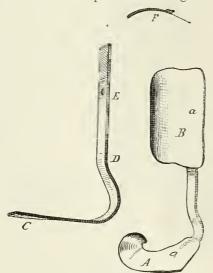


Fig. 7.—The Thomas retention splint.

ity of the foot be corrected, at least approximately; that relapse shall not occur, and that approximately normal function results. It logically follows that the treatment which gives the best functional result is the best treatment, and this necessarily means the exclusion of all mutilating operations, such as excisions of portions of the tarsus.

The methods of treatment to be considered are: 1. Hand stretching

without an anesthetic. 2. "Wrenching." 3. Intermittent stretching by braces. 4. Hand stretching, "modeling," with patent anesthetized. 5. "Wrenching" and forcible correction with the ostcoclast. 6. Tenotomies. 7. Open operations. 8. Osteotomies, linear and cuniform. 9. Enucleations of whole bones. 10. Amputations.

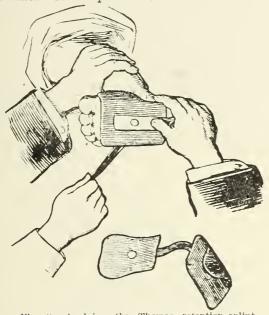


Fig. 8 .- Applying the Thomas retention splint.

Hand stretching, without an anesthetic, may be commenced as soon as the child is born. It should be as vigorous as the heart of the doctor and the sensibilities of the parents will permit, and it should be repeated at least once every day. In the intervals some simple removable reten-



Fig. 9.—Applying the Thomas retention splint.

tion brace should be used. Judson uses a steel bar, with transverse flanges, applied to the inner side of the leg and extended foot, held on by webbing straps, to correct the varus. A strip of block tin, well padded and held in place by a roller bandage, may be applied along the outer

side of the leg and extended foot. When the varus has been over corrected, an angular brace may be used, consisting of a metal foot plate, taking the sole of the foot, with a single flange on the inner side of the foot. To this the foot is strapped by webbing, adhesive plaster or a bandage. From the side-flange at the heel a bar or rod extends up to the garter line, with a steel and leather band around the leg. The bar must be made adjustable where it joins the side-flange of the foot plate, or, if a rod is used, it can be bent as the correction of the equinus progresses.

I am accustomed to apply a plaster splint, cut it into two parts before it hardens to make it removable, and renew it every two or three weeks. These methods may be pursued until the case is cured or the patience of the parents or the doctor has been exhausted. In slight and some moderately severe cases the deformity may be corrected by the time the child begins to walk, and a cure may result by the end of the second year. If the deformity has not been corrected by the time the child begins to walk,



Fig. 10.—The Thomas retention splint applied.

it is my custom to operate, if operation is permitted by the parents, for walking with the feet in the varus position usually exaggerates that deformity and walking with any degree of equinus leads either to a relapse of the varus or to the hyperextension deformity at the knee.

The use of the Thomas wrench, or any of its modifications, gives additional strength for stretching cases past the age of infancy. Thomas used the instrument without an anesthetic to stretch the foot to a condition of flaccidity and then bound the foot fast with adhesive strips in an iron splint. As soon as any resilliancy returned in the stretched tissues, at the end of three or four days, the stretching was repeated until the deformity was over corrected. The best results I have ever seen as to correction and function have been cases treated by this method, but in this country few parents will submit their children to this painful method. Shaffer, of New York, has been the most consistent and persistent advocate of intermittent stretching and continuous retention by braces. In slight deformities in children, and in moderately severe cases

in infants, excellent results can be had by this method, provided the surgeon has unlimited patience and is a natural mechanic. For years I treated all cases by this method; for years I have not used the method in a single case.

Hand stretching, or "modeling," of the foot, the patient being anesthetized, was brought into prominence in this country by Lorenz two and one-half years ago. There was nothing really new in this maneuver to orthopedic surgeons. For years we have stretched by hand, using the edge of the table as a fulcrum, all tissues that could safely be stretched or torn. Fifteen years ago I brought the first Thomas wrench to this country, having previously used a modification of the wrench, and it came into pretty general use among orthopedists as an aid to the hands in correcting resistant cases. Great credit, however, is due to Lorenz for

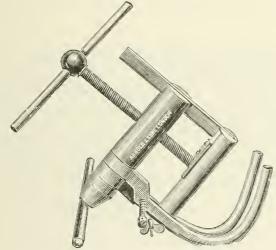


Fig. 11.-The Grattan osteoclost.

advocating a very heavy plaster splint to be worn in walking for four or more months without change and until the cure is permanent. Previously we had used light plaster splints, changed frequently, and often replaced by braces, and some of the full correction was often lost at the changes of plaster splints and through neglect in the adjustment and care of braces. To-day we use the Koenig wedge-shaped block as more convenient than the edge of the table. We work slowly on a low table where much of the operator's weight can be thrown on the foot, and we do not stop in the correction of the varus until it is corrected, even if the foot is torn open on its inner and under side, as has happened to me in five instances. In some few cases the best result can not be had by this bloodless modeling, because of the inward rotation of the foot at the ankle joint. The front of the foot is more likely to be bent outward at the tarso-metatarsal joint than the whole foot to be turned outward at the ankle joint. In such cases it is, in my opinion, better to do a tenotomy at the inner malleolus in conjunction with the hand stretching. In some very resistant cases, particularly relapsed cases, in adolescents and adults.

I have not been able to get a satisfactory correction of the tarsal deformity by hand alone. In these cases I have gained added force from the Grattan osteoclast.

As to the bloodless correction of the equinus part of the deformity, there seems to be some misunderstanding. Correction of the equinus without tenotomy of the Achilles, except in very slight deformity, should not be attempted. In very young children, a fracture of the tibia and fibula may easily result; and, although this may be no harm, it is not a thing one wishes to happen. In older cases, the tendon may tear away from its attachment to the os calcis and carry with it a shell of bone and this may suffer necrosis, as I have had happen in one instance. Tenotomy, then, should be resorted to in this region. The Grattan osteoclast, which is a most valuable aid in the correction of relapsed and resistant varus in older patients, is not an instrument to be used as the sole means of treatment. In using it I have torn open the foot along the



Fig. 12.—"Hand modeling" a clubfoot over Koenig's wedge-shaped block.

line of Phelps' incision, transverse to the sole of the foot, and once parallel to the inner border of the sole of the foot. If the skin is too short to allow full correction of the deformity it must tear or be cut. In my opinion, it is better that it should tear. In tearing, only those parts are separated that are positively too short, whereas an incision may very easily divide more or less than is necessary. So in the correction of the equinus after tenotomy, in small babies the skin occasionally tears across the back of the ankle. These tears I am accustomed to seal immediately with collodion and cotton, and they heal readily. In some cases the tension on the skin at the inner side of the foot and at the back of the ankle is so great that it is blanched without tearing. The circulation usually returns before harm is done, but in one instance, in a woman 32 years old, who had an extreme deformity, so that the toes pointed inward and backward and the sole looked upward and backward, the superficial layers of the skin sloughed from the heel two-thirds of the way to the toes. It

healed, however, under a balsam of Peru dressing, with perfect correction of the deformity. After this "modeling redressment," the foot is padded to the thickness of half an inch with bandages of sheet wadding, these are firmly compressed with a muslin roller bandage and a heavy plaster-of-paris splint carefully applied from the toes to the knec. This must be at least a quarter of an inch thick at the thinnest part. In some instances the stretch on the blood vessels is so great that the toes are blanched. If the circulation does not return within a short time, a triangular window should be cut in the splint at the front of the ankle or at the back of the heel. The opening in front more readily relieves the tension, but one loses a little of the good position in which the foot has been placed. The splint must be trimmed at the top to permit of right-angled flexion at the knee, and at the bottom the dorsum of the toes must be exposed. On this splint, without change, the patient walks for at least four months.

For seventy-five years tenotomy has been employed in the treatment of clubfoot, and comparatively few eases have escaped this operation.



Fig. 13.—Feet of child, 3 years old, before and after correction by "hand modeling" and tenotomy of Achilles.

While many tenotomies have doubtless been made unnecessarily, and in very many more only a small part of the fruit of the operation has been gathered through timidity and nerveless after-treatment, the operation still remains one of the most valuable, if not the most valuable, procedure in the treatment of these deformities. One Lorenz, in 1784, at the suggestion of Thilenius of Frankfort, is credited with the first section of the Achilles tendon for the correction of clubfoot. The first tenotomy in England is credited to Mark Anthony Petit in 1799. For more than 30 years it does not appear to have been repeated in that country. On the continent Michaelis operated in 1811, Sartorius in 1812, and Delpech in 1816, but to Stromeyer of Hanover, more than to any other, do we owe the development of the operation in 1831. To him went Dr. William J. Little of London with his own clubfoot when he could find no surgeon in England who would attempt the operation. Little introduced the operation into England and popularized it there in 1836. In this country Dr. David L. Rogers of New York operated in 1834, and Dr. James H. Dickson of North Carolina in 1835, but to William Detmold, a student of Stromever in Hanover, who came to New York in 1840, we really owe the introduction of the operation here. In 1847 the great Valentine Mott "Notwithstanding the facts, the question of tenotomy still resaid:

mains undecided." When, however, David Prince of Illinois wrote on the subject in 1866, Louis Bauer of Brooklyn in 1868 and Louis A. Sayre of New York in 1875, the operation may be said to have really received the sanction of the masters of orthopedic surgery. In the beginning the operation was simply a division of the Achilles tendon, later the tendons of other shortened muscles were also divided, also the plantar fascia. Surgeons were satisfied with a partial correction of the deformity, fearing non-union of the cut tendon if the ends were widely separated. This timid method of cutting the tendon and waiting a few days till soft union had taken place I found still the practice at the Royal Orthopedic Hospital in London in 1888, despite the fact that as early as 1838 Scoutetten advised immediate correction of the deformity and Savre in New York and R. W. Parker in London had practiced immediate correction for years. It may still be the practice there for all I know. The choice between a subcutaneous tenotomy and a tendon-lengthening by an open incision is one that admits of discussion. We grant that an operation by open incision is a more proper surgical procedure, provided, first.



Fig. 14.—Feet of a child, 7 years old, before and after correction by "hand modeling" and tenotomy of Achilles.

that the operator is a clean surgeon, and, second, that the function of the foot after an open lengthening is as good as when a subcutaneous division is made. I am inclined to believe that all operators are not clean surgeons, and I know that the function of the foot is not as good where a large open wound has been made as where a subcutaneous division has been performed. Further than this, the correction of a clubfoot which has relapsed after operation by open incision is a nasty job, far more difficult than one which has relapsed after a tenotomy. Cases do relapse, no matter what the method or who the surgeon may be. The first real advance in tenotomy after Stromeyer's time was that by Scoutetten in immediate over correction of the deformity, the second followed R. W. Parker's anatomic studies and was the subcutaneous division of all tight bands in the neighborhood of the inner malleolus, and the third is the subcutaneous division of all tight bands anywhere that can not be safely stretched or torn. With strong hands for "modeling redressment," with the occasional help of the Grattan osteoclast and with tenotomy, I have been able to correct all clubfeet that have come to me. My cases have run, as will be seen by the table of statistics, from infancy to 32 years of age with the most extreme deformity.

The open operation of Phelps is well known. Originally it consisted

of an ineision commencing at a point where the tendon of the anterior tibial muscle passed near the inner malleolus and was carried down to and two-thirds aeross the sole of the foot; all the tissues were cut from the skin to the bones. Even then the deformity frequently could not be eorrected without the aid of a powerful machine, and sometimes even an osteotomy had to be added. All this meant much exposure of the wound and frequent infection. I have not performed this operation for fifteen years and I never expect to make the operation again. Jonas' method of covering the gaping wound by a V-shaped incision through the skin and a sliding flap is to be recommended to any one who feels that he must do the operation. In my opinion, it is in itself not sufficient in severe varus deformities and is both mutilating and unnecessary in the milder grades of deformity. Osteotomies extend all the way from a linear osteotomy of the neek of the astragalus, or the anterior portion of the os calcis. through a chopping up of all of the bones of the tarsus, until the foot feels like a bag of beans, as recommended by Fitzgerald of Australia, to a cuneiform osteotomy or tarsectomy, amounting to the removal of a wedge from the upper and outer aspect of the foot equal to a third of the tarsus. This operation mutilates the foot beyond all possibility of repair. Nothing worse could be conceived except an amputation, if even that is worse. Exeision of the astragalus in adult cases may be demanded in rare instances, but it should not be performed until an x-ray pieture has shown that the tibia actually articulates with os calcis at the posterior portion of the ankle joint and that the bone is simply an insurmountable wedge between the os calcis and tibia at the front of the joint. Amputations. like cuneiform osteotomies, may be performed if the surgeon knows no better way of ridding the patient of his deformed foot and if the patient knows no way of finding a better surgeon.

FOUR CASES OF PROSTATIC OBSTRUCTION.*

DR. W. T. BELFIELD.

CHICAGO.

In these latter days, a man who has gray hairs and suffers from urinary difficulties is in imminent danger of prostatectomy, which is sometimes needed, at other times not. For in many of these patients the prostate is not responsible, in spite of their gray hairs; they suffer from vesical ealeulus, from carcinoma or papilloma of the bladder; from loeomotor ataxia. I have recently seen a patient whose urinary troubles were entirely due to this spinal cord lesion, and yet who had narrowly escaped prostatectomy in each of two Eastern cities. It should be remembered that many elderly men have urinary troubles, including eystitis, without any obstructive disease of the prostate.

The prostatie diseases of elderly men that do eause urinary obstruc-

^{*} Presented before the Chicago Medical Society, Dec. 20, 1905.

tion are four: 1. Sclerosis; 2, pus infection; 3, hypertrophy (adenoma); 4, carcinoma.

1. Sclerosis of the prostate is frequent, without enlargement of this organ; indeed, the prostate may be smaller than normal. The successful surgical treatment is not prostatectomy, because this fibrous prostate can not be enucleated, as experts like Freyer and Albarran acknowledge. It consists of channeling a canal through the fibrous vesical orifice by means of the galvano-cautery, introduced through a median perineal urethrotomy. This operation of galvano-prostatotomy I performed and published in The Journal of the American Medical Association in 1885. Within a few years it has been adopted by Chetwood, who uses a special cauterizing instrument instead of the simple galvanic knife.

This patient, 68 years of age, began to develop the usual symptoms of prostatic obstruction eight years ago, culminating three years ago in complete retention, since which time he has been unable to urinate except through a catheter. His prostate is not enlarged; indeed, is smaller and thinner than normal. Three weeks ago I made a median perineal ure-throtomy; the finger, introduced into the bladder, found a fibrous ring, but no prostatic enlargement. Prostatectomy was not only useless, but practically impossible. A galvano-cautery knife was introduced along-side the finger, its blade placed on the fibrous ring, the finger withdrawn and the circuit closed so as to heat the knife. After a few seconds the current was broken, the knife cooled and withdrawn. To-day he urinates without a catheter, his residual urine is about one ounce, the urine still contains a little pus, he holds the urine two hours or more without discomfort. This is three weeks after operation.

- 2. Hypertrophy (adenoma) of the prostate is illustrated in this second patient, 75 years old, from whom a large middle lobe and two lateral outgrowths were removed by the same median perineal urethrotomy performed for galvano-prostatotomy in the first case. The result is even better than in that case, thanks not to the operation but to the better condition of the bladder. Two weeks after operation, the patient is holding his urine for two to three hours. The residual urine is less than one-half ounce. This operation is not practicable when the prostate, especially its median lobe, is greatly enlarged. And it must not be mistaken for "perineal prostatectomy," in which the posterior surface of the prostate is exposed and opened. This latter operation, so popular in recent years, is rapidly being abandoned, because of its unfortunate sequelæ, permanent fistulæ, incontinence and cicatricial contraction of the vesical neck.
- 3. Carcinoma of the Prostate.—This is a disease of elderly men, unfortunately common and usually mistaken for simple hypertrophy. According to our present knowledge, about one out of every ten cases of "prostatic enlargement" in men over 50 is cancer. I have the misfortune to have 8 cases of prostatic cancer under my observation at present. Radical operation, extirpation of the cancer, is rarely if ever successful even in prolonging life, and is often immediately fatal. Surgical aid seems at present best limited to providing a suprapulic exit for the

urine. It is the almost universal practice to secure this by means of suprapubic cystotomy. The patient here presented illustrates a much simpler and safer method, namely, simple puncture with a small trocar and canula; a small soft catheter is then introduced through the canula, which is then withdrawn, leaving the catheter to drain the bladder. After three or four days the catheter is removed, cleansed and reintroduced through the fistulous track. Thereafter the catheter is removed and cleansed daily and the bladder washed out by the patient himself. It is always desirable to inspect the vesical interior to determine the presence of calculi; often the cystoscope can not be introduced through the prostatic urethra, because of the cancerous growth. In such cases a straight cystoscope can be introduced through the suprapubic canula at the time the puncture is made. All this can be done without any anesthetic, or under nitrous oxid narcosis. The patient here presented was thus treated at the Alexian Brothers Hospital: Punctured with a trocar, a straight cystoscope introduced, the bladder inspected, then a permanent catheter inserted and the canula withdrawn.

4. The last patient illustrates two of the common evil results of perineal prostatectomy, namely, a permanent perineal fistula and permanent incontinence of urine. Many such, operated on by excellent surgeons, have come under my observation. It seems to me that this operation, the removal of the prostate through its posterior surface, should be generally abandoned, as it has already been by various prominent surgeons.

I would mention three operations for the removal of prostatic obstruction: 1, Galvano-prostatotomy for channeling a fibrous prostate; 2, enucleation of adenomatous masses from the mucous surface either (a) through a median perineal urethrotomy or (b) through a suprapubic incision, the former when the growths can be reached from the perineum. otherwise the latter. The suprapubic incision is best made in two stages—the first incision extending to, but not through, the bladder; four or five days later the second incision—through the bladder—is made, and the prostatic masses are enucleated. In this way the chief danger of the suprapubic operation—septic infection of the suprapubic tissues—is minimized.

Nitrous oxid is the anesthetic preferred; if air be admitted with the gas, the narcosis may be prolonged indefinitely.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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FEBRUARY, 1906.

GOVERNOR DENEEN'S PROGRESS IN REFORMING ILLINOIS STATE INSTITUTIONS.

Under this caption, the editor of the Ohio State Medical Journal has, in his February issue, given place to an editorial, which is given in full below. It is hardly necessary to say that we appreciate highly the kind words uttered regarding the attitude of the Illinois State Medical Society and the Illinois Medical Journal in this matter. Very few of our readers understand what this attitude has cost us during the past four or five years. Our motives have been impugned, our statements contradicted and many long friendships have been sundered, because we have dared to speak what we believed to be the plain truth regarding the Institutions and Boards of Illinois and those responsible for their mismanagement. But, as the Ohio Journal intimates, a brighter day is dawning. Drs. Billings and McAnally, Miss Lathrop and Rabbi Hirsch have accepted positions on the State Board of Charities and will soon inaugurate a new era or, rather, renew the golden era of these Institutions, which was so wantonly broken up by such spoilsmen as Altgeld and Tanner and continued by the inane Yates, notwithstanding his solemn promices to reform the misrule of his predecessors. Governor Deneen has our congratulations and thanks for what he has already done, and we await with patience the day when he will undertake the reform of that other Board so near and dear to the medical profession and the people of Illinois. to the medical profession and the people of Illinois.

The Ohio State Medical Journal editorial reads as follows:

Light dawns on the abysmal chaos in which ten years of political mis-

management has forced the reformatory and charitable institutions of Illinois. Silently, but surely, and with a relentless disregard for the convenience and comfort of the horde of parasites, high and low in official or political degree, Governor Dencen is nullifying the evil conditions which developed and throve during the administration of at least two [three. Ed.] of his gubernatorial predecessors. There is no clamor and ostentation about this most commendable reform. It began by the adoption and enforcement of a strict merit system as the requisite for service, and it proceeded by a reorganization of the working force in the various institutions, a process still far from complete, but sufficiently advanced to strike terror to the grafters in officialdom and the ward healers among the employés both in Illinois institutions and in those adjoining states in which reformation is demanded by public sentiment and where it soon will begin.

The purposeful method of Illinois' chief executive comes into striking evidence in his most recent action reorganizing the State Board of Charities and restoring to the place which they had adorned two of America's foremost charity experts, Rabbi Emil G. Hirsch and Miss Julia Lathrop. whose resignation, forced by the appointment of an obnoxious political secretary, was one of the most conspicuous of numerous institutional scandals of the Yates régime. A further wise and salutary action consisted in giving representation on the new charities board to two prominent physicians, Dr. Frank Billings, of Chicago, and Dr. John T. Mc-Anally, of Carbondale. The selection of Dr. Billings as president of the board is a graceful compliment to the medical profession of Illinois and, indeed, of the country at large. His ideals of professional obligation are the highest, and his record in institutional rehabilitation as achieved in the Cook County institutions at Dunning mark the new president of the Illinois charities board as possessed of the qualifications necessary to carry forth the uplifting movement which promises to restore the state institutions of Illinois to public and professional confidence.

It has already been referred to, but it will bear repeating, that the medical organizations and the journal of the state medical society in Illinois took a prominent part in the agitations against the perpetuation of a corrupt political spoils system in the Illinois institutions.

DR. McCORMACK WILL VISIT ILLINOIS.

At the invitation of the Council of the Illinois Medical Society, Dr. J. N. McCormack, Chairman of the Organization Committee and National Organizer of the American Medical Association, has consented to devote the month of April to organization work in Illinois. For the last two years Dr. McCormack has been giving the greater part of his time to this work, in which he has been pre-eminently successful. During the fall and early winter he made an extended tour through Minnesota, North and South Dakota, Montana, Idaho, Washington, Oregon, California, Texas and other states. Wherever he has gone he has met and talked to the members of the medical profession, urging on them the necessity of proper organization as a means of improving the condition of

the profession and of increasing its influence for good in the community.

His extended experience and wide range of observation have given him a knowledge of the problems of medical sociology such as few men possess. Probably the most unique and valuable feature of his work has been the meetings arranged for him by the local profession in the towns which he has visited, to which were invited not only all the physicians of the community, but the clergy, the local bar, the school teachers and business men and the general public. The result has been a stimulation of effort toward real and effective medical organization and a deeper appreciation of the influence which can be exerted by the local medical society, not only on its own membership, but on the general public as well.

Such work has been of great value in other states and it is greatly necded in Illinois. The old idea of a medical society was an organization which met monthly, quarterly or annually, at which a few physicians met, read papers and discussed them, and after a day spent in scientific work, the society adjourned and remained in a condition of suspended animation until the next regular meeting. Such a society was undoubtedly of great value, but its influence was largely limited to those of its members who attended the meetings. The ideal medical society is all this and something more. It is an ever active organization, including all the reputable physicians practicing in its territory, a component part of the organized profession of the state and nation, in close touch with all matters of public interest which it can influence for good, keenly alive to its responsibilities as the authoritative mouthpiece of the profession and ready and able at all times to co-operate with any agency outside its own membership whereby local conditions may be improved. Such organization is needed in Illinois. It can only be brought about by the local physicians themselves, yet Dr. McCormack can and will be of great assistance to our county medical societies throughout the state by giving to each society he visits the aid of his experience and observation.

Dr. H. C. Mitchell, President of the Illinois State Medical Society, has written to each Councilor and County Secretary in the state asking that arrangements be made to give Dr. McCormack the largest possible opportunity to meet and talk to the medical profession. Meetings have been arranged at the following places: Carbondale, April 2; Mt. Vernon, April 3; Centralia, April 4; Decatur, April 5; Olney, April 6; Newton, April 7. This will bring him to the center of the state. President Mitchell asks that all possible efforts be made to arrange for meetings for the remaining days of the month. County societies and officers are urged to communicate at once with Dr. Mitchell and advise him regarding the time and place of desired meetings. The complete itinerary will be announced in The Journal in a subsequent number.

In behalf of the Illinois State Medical Society and its component societies, The Illinois Medical Journal extends to Dr. McCormack

a hearty welcome and the hope that his month in Illinois may be productive of great good to the profession and to the public.

THE CRUSADE AGAINST VENEREAL DISEASES.

The effects of a successful eampaign against tuberculosis are apparent in increased sanatorium facilities and a general increase of knowledge. The public protects itself because it knows how, and the spread of infection is diminished because the people have been taught certain elementary facts regarding preventive measures. The time has come now when the profession is awakened as never before to a realization of the extent of the venereal plague. At last the value of publicity regarding the venereal diseases is acknowledged and practical methods of prophylaxis are being urged, practical means of limitation are being adopted. Germany, France, Italy, Spain and Holland have organized societies for the study of these diseases in all their aspects, with special reference to educating the public in regard to the danger of infection.

In the United States, Dr. Prince A. Morrow and other eminent practitioners organized a year ago the Society of Sanitary and Moral Prophylaxis, with headquarters in New York. Last December the Detroit branch was successfully inaugurated. The call for the meeting stated that "the meeting is for a consideration of the so-called social evil diseases and the best methods to be employed to get before the people the dangers attending these affections and the ways by which they can be avoided." Dr. Burr of Flint showed the cost to the state of patients who are in asylums as the result of these diseases. President Augell of the University of Miehigan wrote words of commendation, and Dean Hutehins of the law department, who was present, spoke of his interest in the movement. Several clergymen spoke, expressing their approval of the efforts of the profession to disseminate actual knowledge. Addresses were also made by principals of schools and public-spirited business men. Dr. Denslow Lewis, of Chicago, told of the opposition he had encountered in attempting to interest the profession in the consideration of matters relating to sex problems.

This meeting marks a new era in professional endeavor and practical humanitarianism. At last the profession is aroused to the necessity, not only of a thorough investigation of all conditions relating to the venereal diseases, but also to a diffusion of the knowledge already possessed. There is no longer fear of "recognizing" prostitution. We no longer believe, as Howard Kelly said at the Columbus meeting of the American Medical Association, that "the discussion is attended with more or less filth and we besmirch ourselves by discussing it in public." We want to save the young by teaching protection through knowledge. We will show the danger, explain the methods of infection, tell of the consequences, make manifest the facts, evoke the honor of the young man, and dispel the ignorance of the young girl, so that she may know the danger that besets her. When these things are done in an honest and common-sense manner the results are certain.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY MEDICAL SOCIETY.

The regular monthly meeting of the Society was held Monday, January 8, at the Elks Club, Quincy, with President Koch in the chair. Those present were Drs. Ashton, Brenner, Baker, Becker, Center, Christie, Jr., Ericson, Gilbert, Gilliand, Hart, Koch, Knapp, Knox, Knapheide, Lightle, Fesen, Montgomery, Nickerson, Nichols, Pfeiffer, Pendleton, Reticker, Rice, Robbins, Rosenthal, Shawgo, J. B. Shawgo, Kirk Zimmerman. Drs. W. Zimmerman of Quincy and McComas of Pittsfield were also present. The meeting was called for 11 a. m., and, after a short business session, lunch was served by the Elks. Following an excellent lunch, the session of the Society was resumed.

The various aspects of medicolegal conditions were discussed, as was also the attitude taken by corporations toward surgical aid. The present local status of the two conditions was very unsatisfactory, and the committee on program and scientific work was ordered to arrange a meeting with the attorneys and manufacturers. An amendment was adopted changing the hour of meeting from 2 p. m. to 11 a. m., the change being acceptable to both city and country members. The scientific program, consisting of a symposium on pneumonia, was postponed until the February meeting. After a vote of thanks to the Elks both for the use of their club rooms and the very enjoyable entertainment afforded, the meeting adjourned.

George E. Rosenthal, Secretary.

CHICAGO MEDICAL SOCIETY.

The regular meeting of the society was held at the Chicago Public Library, November 8, with the President, Dr. Charles S. Bacon, in the chair. The following program was presented:

Locomotor ataxia, Dr. Edward F. Wells, discussed by H. N. Moyer, H. T.

Patrick and L. H. Mettler.

LOCOMOTOR ATAXIA.* EDWARD F. WELLS, M.D.

CHICAGO.

Locomotor ataxia, or tabes dorsalis, is an infrequent disease, affecting oftenest males who are usually syphilitic. It is probably due to some special cause which finds in the subject of syphilis its most congenial soil. The essential features of the morbid anatomy, upon which all the striking symptoms depend, are degenerations of the posterior roots and columns of the spinal cord. The onset is so insidious and the incipient stage so prolonged that the initial symptoms are usually, but not necessarily, unrecognized. Upon the recognition of the early manifestations, however, rest largely the welfare of the patient and the good name of medicine; they may and should be detected and their importance appreciated. The peculiar pains are, in the great majority of cases, the earliest symptoms. Other early manifestations are the visceral crises and the loss of certain reflexes, the most striking of which are the knee jerk and iridoplegia. In some rare cases paresis of the bladder or atrophy of the optic nerve appears. The latter is of prognostic importance because other symptoms are usually stayed in their progress or do not arise. Motor incoördination, which gives to the malady its name, becomes, in time, one most prominent symptom. The inco-ordination is limited

^{*} Abstract of a paper read before the Chicago Medical Society, Nov. 8, 1905.

to the parts enervated by nerves passing through the affected roots and columns, and is, therefore, usually most marked in the lower extremities. Static ataxla is also present. There is loss of museular sensibility and tone. Brittleness of the bones, leading to fractures from slight injuries; Charcot's joint, the peculiar foot known as the tabetic foot and the perforating uleer of the foot are the most frequent and striking of the trophic disturbances. The duration may be, and usually is, very prolonged. This applies to the malady as a whole and to the various stages as well. Thus the pretaxic stage may eover from five to fifty years; the final paralytic stage may confine the patient to his bed for many years. The vietim is often earried off by some intercurrent affection, but if he lives long enough he will die of tabes. The diagnosis may be made early upon the symptoms noted. One point of paramount importance in making early diagnoses is a recognition of the faet that such striking symptoms as the loss of the knee jerk and the presence of the Argyll-Robertson pupil may be, and usually is, early, present only at times, as, e. g., during exacerbations of pain and the viseeral crises. Later, with such an assemblage of symptoms and signs as is presented in this malady, a diagnosis ean not be avoided. The treatment, when intelligently formulated and persistently followed, may be very useful in relieving distressing symptoms and in staying the progress of the disease. The pains may be relieved by hot baths, or, preferably, by placing the patient in bed and inducing gentle and prolonged perspiration. Morphia may be required in the most severe eases, although rarely in my experience. I prescribe and advocate the use of the biehlorid of mereury in moderate doses, given, with proper intervals of rest, for many months, or usually years. Intestinal fermentation is constantly guarded against. Every effort is made to obtain and retain the confidence and interest of the patient; his intelligent co-operation is courted and encouraged from start to finish. I am quite sure that a tabetic patient will fare better in the eare of one intelligent physician than at the hands of many, no matter how eminent.

DISCUSSION.

Dr. Harold N. Moyer: I wish to commend Dr. Wells for bringing this subjeet before us. The experience of one who sees much of locomotor ataxia shows the necessity of an oceasional discussion of it in medical societies. More than half of the tabeties that come to me have had a diagnosis of rheumatism or of some other affection. Not alone is the general practitioner at fault in this matter, but the entire profession from the top to the bottom. Our surgical eonfrères should have this disease in mind to prevent them from operating upon stomach eases that have gastrie erises. The genito-urinary surgeon is occasionally at fault with his prostatic operations in eases in which the erises are in the pelvis, and so on through the whole list. Dr. Wells has given us what might be called a classical description of tabes. I confess that I do not like it. The idea of a progressive malady, beginning with certain groups of symptoms, passing on to a secondary group and then to a last group, involving the lower extremities, is the classical notion which is found in the average textbook. A broader and far better elinical conception is to disregard the idea of order or progression in the symptoms. What he has given is the general rule, but the exceptions are so numerous that the general rule is almost valueless. Tabes is essentially a disease of the posterior roots and posterior columns of the spinal cord—that is, of the entire afferent nervous apparatus which conveys sensation from the skin, the viscera, joints, muscles and tendons, as well as the sensations of temperature and pain. If we think of tabes not as a definite grouping of symptoms, but as a disease of the posterior columns and of the roots connected therewith, we will have a better conception of it, because it may begin at any level in the cord. Usually it begins low down and travels upward; sometimes it begins above and travels downward, or it may begin at any level. It is a simple thing to investigate these various levels. If sensation is impaired at a particular level, and peripheral involvement can be excluded, it should suggest tabes, whether it is in the upper or lower extremity. Such an investigation is easily and quickly made.

The classical signs he describes—swaying, loss of knee jerks, lightning-like pains and the Argyll-Robertson pupil—are the cardinal symptoms.

This should be the understanding of tabes, but if we have the idea of a progressive affection, beginning and ending in a certain way, we misinterpret a large number of cases. In examining any organ that is apparently at fault, as the larynx, the stomach or bladder, tabes is always to be thought of as a possibility in the diagnosis.

Dr. Hugh T. Patrick: I did not hear the first part of Dr. Wells' paper, but there is one point in examining for symptoms which I would like to mention. It is the more present in my mind because to-day one of my oldest and best assistants made a mistake in examining a case of tabes, saying there was no analgesia. The way he examined for it was to see whether the patient could recognize or feel the point of a pin as distinguished from the head. The patient could always feel the prick of the pin, but nevertheless there was marked analgesia of the lcgs. When I stuck her deeply and obliquely, which always causes considcrable pain in a normal person, she had no pain. That is the way to examine for areas of analgesia. There are many points worthy of mention in that part of the paper which I heard, concerning which I heartily agree with the author. There is one little caution to be observed, however, with regard to hot baths. A warm bath for cleanliness is not to be forbidden to a tabetic, but prolonged hot baths, Turkish baths, Russian baths or a good soaking in a tub of hot water for pain are to be categorically prohibited, because they may cause an aggravation of the disease. That statement I got from Erb many years ago, and its validity has been confirmed in my experience repeatedly, notably in the case of patients who have severe lancinating pains or distressing paresthesia in the legs, and who have been advised, by some friend ordinarily, sometimes by a physician, to take a course of Turkish baths for relief, on the supposition that the trouble is rheumatism or some similar affection. Some of these patients have thereby been made definitely and rapidly worse. I have seen the same thing happen repeatedly in patients who have gone to Hot Springs, Ark., and have there taken a course of hot baths for various sensory disturbances. There is no question that occasionally the pains are relicved by these baths. I do not know why some are improved and not others. Many of them are made much worse, and some of the physicians at Hot Springs have assured me that they have observed the same thing. With regard to the use of mercury and iodids in the treatment of tabes, I have undergone a change of heart, because formerly I used both as one docs in tertiary or late syphilis. I have become convinced, however, that iodid makes tabetics worse, whereas mercury makes them much better. Some tabetics, pretty well along in the disease, are definitely benefited by a very active course of mercury. I give it by the skin, but it can be given hypodermically. I do not believe in giving it by the stomach, because we can not give enough mercury in that way without irritating the gastrointestinal tract. Dr. Wells may be able to fill up his patients with this agent without irritating the stomach. I can not do it. I give about two drams of the ointment by inunction twice a day for a month or more. Care of the mouth is exceedingly important. It is not to be overestimated in the administration of mercury in large doses. Patients who can not take one dram of mercury every other day with a foul mouth can take two drams twice a day with a clean mouth; not that they absorb all of the two drams, but they get a lot.

I wish particularly to commend Dr. Wells' recommendation of putting tabetics to bed. Patients in whom general nutrition is failing, who are getting weak and failing in tlesh, ought to be put to bed at once, and in all cases of repeated pains, which continue day after day, rest in bed is imperative. There are other things that might be added. What intestinal absorption has to do with starting pains I do not know; but I do know that some of these patients do very well on a daily colonic flushing. Put the patients to bed, give a colonic flushing every day, or twice a day for wecks, and they are exceedingly confortable. It helps a great many of these patients, but not all of them. Stretching of the spinal cord or spinal column helps some. I do not know why. I wish I did. With reference

to what has been said about surgeons operating on some of these cases, I will say, as an illustration, that within three months at one of my clinics I have had two cases of gastric crises in which abdominal section was resorted to by a surgeon who is deservedly ranked as one of the greatest in the United States.

Dr. L. Harrison Mettler: I want to emphasize a point that seems very important to me in relation to the diagnosis of tabes dorsalis. I believe that we ought to try and forget that it is a disease of the spinal cord or of any part of the cord. The diagnosis is not primarily made upon the mere symptoms of any disease, but upon the accuracy of the interpretation of those symptoms. Individual symptoms and even elaborate groups of symptoms are sometimes marvelously alike in quite dissimilar diseases. We all know how the pseudo-affections often resemble the true affections, as a shadow resembles a substance. True tabes, for instance, is at times extraordinarily like the pseudo-tabes of central syphilitic and of certain polyneuritic origin. We need some way of differentiating these cases from one another, else we will find ourselves taking credit for curing tabes when actually we have been treating and benefiting a mere pseudo-tabes. Our knowledge of true tabes has increased in the last few years to such an extent that we are departing from the idea that it is solely and essentially a spinal-cord disease. We are recognizing that it is a very much more extensive trouble; that it is, as has already been hinted at, a degenerative disease of the peripheral sensory apparatus, of that part of the sensory nervous system that first receives the external stimulation and transmits the impulse inward to the central organ. This explains the presence of eye symptoms with leg symptoms, crises of the viscera with cutaneous anesthesia, etc. An interruption of the symptoms under this conception as they arise will go a long way in helping us to diagnose many cases when such a diagnosis, early in the disease, is of real value. The character of the symptoms, their location, their grouping and the absence or presence of other related or unrelated manifestations are the essential points to be noted, and not merely their dependence upon a supposed disease in the posterior columns of the cord. It is of no special credit to the physician and of very little help to the patient to diagnose tabes dorsalis when all of the classical symptoms—the completed picture—of the disease are fully present. It is when there is a transient diplopia; when the bladder function is disturbed; when there is a slight beginning difficulty in walking, especially in the dark; when the pupil is acting a little peculiarly; when rheumatoid pains are complained of; when the optic discs are showing a slight change; then we should attempt and make the diagnosis. As nearly all of these symptoms may appear in other diseases in one way or another, we have to study them from particular points of view rather than as mere symptoms. Their appearance in a syphilized individual, their simultaneous wide distribution, etc., must be given prominent consideration. The distinctly sensory origin of the essential ones among them and the appearance of the more important of them in those neurones that are subject normally to the greatest and most prolonged strains are especially characteristic. For example, we all know that during the waking state no neurones are probably kept in more constant activity than are the apparent neurones associated with the functions of sight and walking. There was a case reported wherein the earliest symptoms appeared in the right arm. I refer to the well-known case of the London 'bus-driver. The influence of strain in the localization of this wide sensory disease process is strongly suggested in this case.

The point I wish to emphasize is this: We can not diagnose tabes dorsalis, except in relatively advanced and clear cases, upon any well-founded, classical, distinct, definite, well-established picture. We have got to take the symptoms individually, or, better still, in small groups, and interpret them from the broad standpoint of their presence being due to more or less strain upon certain groups of neurones in the great peripheral sensory apparatus of a syphilized individual. This, in a broad way, will give one the picture of a progressive sensory degenerative process.

This leads me to the second point that I desire to emphasize, namely, the therapy in relation to true tabes and pseudo-tabes. There are eases of the pseudo

type as well as cases in which a beginning tabes is associated with still active syphilis of the arteritic sort. These must be carefully kept apart from the cases of pure, true, uncomplicated tabes. The point must be here strongly remembered that true tabes is primary degeneration in a particular set of neurones, as I have indicated, and is nothing else. The moment we get pure motor manifestations or symptoms indicating a disease process outside of that belonging to true tabes we have, with the latter, a complication, tabes plus something else. Under mercurial treatment it is this plus something else and not the essential tabetic process that in my opinion is benefited. In this way we are all misled at times in supposing and in affirming that some of our tabetic patients have improved under antisyphilitic medication. I am convinced from my own observation and the reports of others that true tabes, the degenerative process in the neurones which we now recognize as the essential basis of the disease, is incurable and not modified by any sort of treatment of a mere medicinal character. But I am equally satisfied that we are often called upon to treat cases in which a degenerative process early in the disease is associated with a more or less marked, obscure, pseudo-tabetic, arteritic, syphilitic condition, and that in these cases we often get marked improvement in the general symptomatology with the heroic use of mercury. In these few words I have endeavored to emphasize the point that we should look at tabes dorsalis in a broader way than is usually done and interpret the symptoms rather than take them merely as the constituents of a fixed and complete picture of the diseasc. This will, as a rule, best enable us to make the early diagnosis of the trouble, the diagnosis that, after all, is the only really valuable one.

Secondly, I have endeavored to emphasize the fact that we should not mistake pseudo-tabes, mixed tabes and tabetic conditions associating themselves with other syphilitic and curable conditions with the pure disease which we mean when we use the term, bad as it is, tabes dorsalis.

Dr. Edward F. Wells: I thank the various speakers for the discussion they have given my paper. I intended that the keynote of the paper should be the early diagnosis of tabes. There is no question about the diagnosis of this affection when the disease is well established; but its diagnosis in the earlier stages is a diagnostic feat of no mean importance. For this reason I dwelt particularly upon this feature, a foundation for the extended remarks made upon the management of the earlier stages of tabes. I would say that in my paper no mention was made of Turkish baths or prolonged hot baths in any stage of tabes, because I do not advocate them. But I would like to ask Dr. Patrick whether in his experience the fulgurant pains of early tabes have not been decidedly ameliorated by putting patients to bed and keeping them in a gentle perspiration.

Dr. Patrick: Putting patients to bed is essential in the treatment of any case of fulgurant pains. While I have not kept patients in a gentle perspiration

while in bed, I shall be pleased to try it hereafter.

Dr. Wells: My own observation has been that such management affords the greatest relief to those patients. Many of these patients do best if taken into our confidence while managing them, and if they are put to bed immediately upon the appearance of these pains they will require no morphia for their relief. This has been my experience. Mention has been made of the non-use of iodid of potassium. In a portion of my paper which I did not read I specifically mentioned that iodid of potassium was not advocated and that I fear the use of it. I am heartily in favor of the persistent use of mercury in the early stages. I submit these patients to frequent examinations of the urine every two or three weeks, or every month at least, and whenever indican is found in large excess the diet is gone over carefully and readjusted. If such formatives can be gotten rid of by such dictetic measures, well and good; if not, salol or some other intestinal antiseptic is employed. I am quite familiar with the objections to salol and the other so-called intestinal antiseptics. Theoretically they are of no value, but practically a patient with foul-smelling bowel evacuations if given a small dose of salol three times a day will have this condition corrected.

To make a diagnosis early in tabes and to manage the malady properly is an

art, not a science, and the best results can only be obtained by assiduous attention to the various symptoms as they arise, and from these obtain our eoneeption of the morbid anatomy in the individual case. This I think preferable to viewing these eases exclusively from the standpoint of morbid anatomy. The patient's interests are best subserved by maintaining his intelligent and hopeful interest and confidence in the medicinal and hygienic measures which are employed in the management of his ease.

Dr. Hugb T. Patrick: As I feel intensely on the subject, I am impelled to say a word or two in modification of Dr. Wells' absolutely unassailable principle that the patient should be taken into the confidence of the physician. I think that is to be done only with infinite taet—if a man ever has infinite taet. There are some people who may never be told that they have locomotor ataxia, because if they are told that they have it they at once become so despondent, so absolutely hopeless about it as to make treatment impossible. Believing that it is an affection which is not only incurable, but means insanity, paralysis, all the medical ealamities combined, they immediately resign themselves to rapid dissolution. Hence to tell them that they have locomotor ataxia is at once to defeat the object of the physician. I agree entirely with Dr. Wells that a physician must so conduct himself in his relation to his patient as to get control of that patient and get him to do the various things which Dr. Wells has so well outlined, and all of which have my approval; but I must very positively dissent from any general proposition that a patient is always to be told what he has. doubt Dr. Wells will grant me that slight modification of what he has advocated. I have seen on a few occasions not only unfortunate but really deplorable effects from simply telling the patient what be had.

Dr. Wells, closing the discussion: Replying to the remarks of Dr. Patrick, 1 am quite sure that the proposition I made is the one that should be followed generally, if not always. The whole subject of our connection with any ease is to benefit the patient. I believe something may be done to relieve these patients, and I am quite sure that any patient with a chronic ailment, such as tabes, will do far better in the hands of the ordinary general practitioner, such as I am, for example, to continue day after day, week after week or year after year, even to twenty or fifty years, than he would by going alternately, month after month, to the most brilliant physicians in the land, such, for example, as the last speaker. and, not to be invidious, the other speakers who have taken part in this discussion. I am quite sure of this. The only way to accomplish this result is to be fair and frank with patients. The patient must be taken into partnership in the management of his case; you must obtain his confidence. This can easily be done, but to retain his confidence in this malady as it progresses from bad to worse shows, I think, the highest tact and art of the medical man.

DISCUSSION ON THE PAPER OF DR. BELFIELD.

Suprapubie versus Perineal Prostateetomy, Dr. William T. Belfield, diseussed by Weller Van Hook, E. Wyllys Andrews, F. Kreissl, A. E. Halstead. Edward F. Wells and Alexander H. Ferguson.

Dr. Weller Van Hook:-It has given me great pleasure to be present and hear Dr. Belfield read one of his classical papers on a subject with which he is so familiar and on which he has been able to advance for us something new this evening. Those who have been in practice quite awhile will recall the fact that Dr. Belfield was a pioneer in attacking vesical diseases by the suprapubie operation, and it is quite natural that he should study this route with reference to operations on the prostate. I suppose most of us bave removed prostates by the suprapubic route. It was some twelve or thirteen years ago that I published the first ease of prostateetomy I did through a suprapubic incision. The result was satisfactory. Other cases followed, but the results were not quite so agreeable. However, nothing disastrous occurred. It has seemed to me all along that what we need for the treatment of these old men with prostatic difficulties is an operation so simple, so quickly performed by the skilled surgeon, that old, feeble men will not be immediately destroyed by the interference, but will be given immediate relief. My perineal operation by enucleation does this. I am

aware, too, that the perineal operations my professional friends have advocated will do so also. The operation that I have performed for four or five years can be done in from four to fifteen minutes under nitrous oxide gas anesthesia, which, as Dr. Belfield has intimated, is maintained very easily in operations of all sorts, for a few minutes or half an hour or longer. I feel sure that Dr. Belfield's suggestion to suprapubic prostatectomy in two tempos will be of great value to the advocates of that method. It will help to eliminate infection of the suprapubic space or cavity of Retzius. But it is not apparent to me that a combination of the suprapubic and perineal routes will leave less sequelæ than when we employ the perineal route alone. A decision on that point will have to be postponed until the advocates of the combined method, with Dr. Belfield's addition to the technic, can present us with a larger number of recorded cases. seems to me that the recorded statistics of disagreeable sequelæ of the perineal operation are much more unfavorable than the facts warrant. I agree with Dr. Ferguson quite strongly that in attacking the prostate by the perineal route, we are able to undertake operations on people so old and feeble that a suprapublic operation would be quite out of the question. For my own part, I do not select cases for prostatectomy, but operate on them almost as they come, feeling that the removal of the prostate itself adds very little to the danger of the cystotomy required for drainage.

Dr. E. Wyllys Andrews:—If there ever was an operation that is undergoing evolution, it is prostatectomy. Probably we all agree that this evolution is in an elementary stage. I do not think anyone has yet laid quite enough emphasis this evening on the fact that suprapuble prostatectomy is a "Chicago operation." and that it might properly be called Belfield's operation. Dr. Belfield removed the first two or three prostates, suprapublically, in the history of surgery. In the British Medical Journal in the last couple of years Freyer has reported nearly two hundred suprapubic prostatectomies, presenting a number of photographs and beautiful specimens. The operation has been called in England the McGill operation, but it is historically true, and not at all disputed, that Dr. Belfield's cases were demonstrated in Chicago and published at least three months before McGill's first case.

What is the best method? I still think, with Willy Meyer, that at the present stage of operative work some cases of enlarged prostate can be better treated by the suprapubic and some by the perineal route, making all allowance for the imperfections of our methods, which are rapidly being improved.

Next to Dr. Belfield, in Chicago, I feel we are indebted to Dr. Ferguson, for some time before I knew of anyone else in Chicago doing prostatectomy, he was taking out prostates through the perineum. I also like his instruments. After Dr. Ferguson's work, quite a good deal was done in this city by others, and I think the genito-urinary specialists in Chicago deserve at the present time a great deal of credit. Possibly general surgeons are being passed in that special operation by them, and particularly by one or two men who are having remarkable success and adding much to our statistics. I was quite surprised, in talking the subject over and in discussing what seemed to me a large number of cases of my own, to find that one of our genito-urinary men in this city has done over two hundred perineal prostatectomies, and these within a comparatively short time. I still do perineal and suprapubic prostatectomies, suiting the method to the individual case. Dr. Belfield is, I think, exactly right when he says that on the average we can do a quicker prostatectomy through the suprapubic route than we can through the perineal. That is not true, perhaps, of all cases; but we encounter some in which we are taking away tissue which is not prostatic tissue. We know very well that prostates are divided into types, and that there are types of enlargement that are exactly identical with the myomatous uterus.

The enlarged prostate has two or three lobes, two lateral, and a middle lobe, and just as soon as we incise the capsule of the prostate, either through the bladder wall or through the perineal tissue, in the myomatous type we find we caucleate a globular, spherical myoma, and with the lightest kind

of touch it comes rolling out. After we have enucleated on one side and then on the other, out comes the median marble-shaped tumor. The surgeon does not remove the prostate; he enucleates some "fibroids" from it as he removes a myoma of the uterus and cures his patient. Again, he operates on twenty or more cases from above and finds that one or two of these are not suitable to that route. We have what is called the hard or fibrous prostate, which can not be removed except with cautery, knife, gouge or biting forceps which Dr. Ferguson uses, or the rongeur, which is used in biting off pieces of bone. Then, on the other hand, I do not know of any operation in surgery that is quicker and nicer than to remove one of those prostates, which we sometimes encounter, in which there is bulging into the bladder, a tumor of mushroom shape. I remember one case in which I was led to do the suprapubic operation. The prostate had a lobe which was umbrella-shaped; its top was two inches in diameter, with a pedicle not over three-quarters of an inch, and a little circlet of stone half an inch in diameter lying underneath the umbrella-shaped top. The whole thing was removed by passing a wire ecraseur around it.

After encountering such a case one is very glad he did not try the perineal route. After an easy perineal enucleation, one is glad he did not open above the pubes.

If we watch the work of German and American surgeons who do perineal work, we will notice that there are two types even of this operation. For my own part I have drifted into the type which I like to call the Goodfellow operation, which is the nearest approach to the suprapuble, in that it is almost entirely intravesical work; that is, working inside the bladder. Goodfellow of San Francisco did this particular kind of operation early. On the other hand, we see several of the best surgeons, men whose work I do not like to pass over, who are using the so-called Zuckerkandl skin incision instead of a buttonhole at the center of the perineum. This makes a big horseshoe curve. The termini of the curve are the rami of the isehium opposite the anus. The horseshoeshaped flap is everted, and you see such a beautiful picture by anatomic dissection as is pictured by Young of Baltimore, in which the veins and muscles are laid bare, with the tissue cut away until the prostate is brought into view, and with large-sized hooks is dragged into the field and enucleated through incisions in its capsule. Contrast that with the type of operation done by Goodfellow, in which we can make the simplest buttonholc on a grooved staff, and get into the bladder by notehing the prostate right and left. The incision of the capsule is then from the mucous surface of the bladder and the enucleation is done often with the finger just as quiekly and easily as in a suprapuble ease. I get less hemor-

rhage and smaller surfaces for infection. I insert a large thick-walled tube and use no sutures. I have made that incision only in perineal prostatectomy of late. I had the good fortune to do a partial prostatectomy through the perineal route on a man who probably did the operation first in America, and that is the Reginald Harrison operation. It is a prostatectomy through the perineum, cutting out a middle section of the prostate, though no attempt is made to enucleate all of the gland. A certain doctor in the West showed me an article which he himself published while residing in New York twenty years ago, describing the Reginald Harrison operation first done by himself in America, and this operation I did on the old doctor himself at his dictation. He was 70 years of age, an active practitioner of surgery. I got a good functional result, although not ideal.

Dr. F. Kreissl:—I have been greatly interested in Dr. Belfield's paper and in the discussion, and there is very little I can add to this subject. Of course, we all know Dr. Belfield is, so to speak, the father of prostatectomy, and when he reads a paper on this subject it demands more than ordinary attention. In 1892, when I was barely able to read English, I saw Belfield's admirable article on diseases of the prostate in Morrow's System of Genito-Urinary Diseases. In an idle hour, running across the same article last summer, I appreciated, much more than I did years ago, the advanced and well-defined ideas which he had on

the technic and the indications for his operation, as well as on the different routes for prostatectomy at the time when others had hardly approached the subject. I do not know exactly whether Dr. Belfield said to-night that he would not perform perineal prostatectomy at all, or whether he only meant he would restrict it to certain cases. At the time when he wrote this article he stated distinctly that the choice of operating depends largely on the location, size and shape of the enlarged prostate; in other words, he said it is a mechanical problem, and this is still truc. If he gives preference to the suprapubic route now he must have well-founded reasons for doing so. Naturally, there are certain elements of danger connected with prostatectomy, some of which have been overrated, while others can not be emphasized often and strongly enough, but the real elements of danger are present in the perineal route and in the suprapubic route. They are present everywhere, particularly when we operate on an infected urinary tract of a very old, enfeebled and emaciated individual. The danger is not so much from hemorrhage, which can be controlled, but from infection and from the anesthetic. If these conditions can be overcome by the method advocated by Dr. Belfield, and I have no doubt but that he knows what he is talking about, then it opens up a field and furnishes very good prospects for a certain type of patients who are in a badly infected condition, and who perhaps are not fit subjects for the ordinary prostatectomy, be it suprapubic or perineal, and who, at the same time, are not so far advanced in years as to require another and less serious operation. I have in mind the Bottini operation, which is performed without a general anesthetic, but which, as I pointed out several years ago at the meeting of the American Urological Association in Saratoga, in many cases affords but a temporary relief, because of the relative frequent recurrences I had observed, and which, therefore, I would advise to reserve for old men only, whose lease of life may be counted only by months, and yet require relief, even if only temporary, from the serious troubles of catheter life. The danger of leakage of urine and infection is overcome by Dr. Belfield's modified suprapubic method, by the immobilization of the abdominal muscles and by healthy granulations being formed before the bladder is opened at the second operation. Of course, the same thing occurs in the Bottini operation, because the cautery blade establishes a very deep eschar, protecting the wound surface for days, until by the formation of granulations Nature's safeguard is completed. I have heard of bad cases of urinary infiltration and infection by the perineal route perhaps as often as by the suprapulic. Verhogen found, in 700 cases of perineal prostatectomy, a mortality of 7 per cent., and in the same number of cases of suprapubic prostatectomy a mortality of 10 per cent. He did not say whether the latter cases included recent operations only, or also those of a time when the technic of suprapubic cystotomy and drainage was not so improved as in recent years.

Other unpleasant occurrences and sequelæ mentioned are incontinence of the urine and the formation of fistula. Statistics show that this condition occurs much more frequently after perineal section than after suprapubic operation. Fistula following the suprapubic operation will often be found due to a urethral stricture, which was present and overlooked at the time of the operation, and can be remedied. It may be due to a faulty technic in anchoring the bladder to the abdominal muscles, which can be avoided. It may be due to leaving certain sutures in situ too long. The fistulæ observed in perineal operation are very stubborn, and are caused, as I have found by inquiry among other surgeons, by extensive destruction of tissue, followed by much cicatrization, and are not easily amenable to repair. Verhogen saw fistulæ four times in twenty-one of his own perineal prostatectomies, or about 20 per cent. As to the time consumed in doing either operation, I will say that I have done both perineal and suprapublic prostatectomies, that I have seen many of them performed by the most rapid surgeons, and I believe the ten-minute operations to be so rare that they are almost mythical. The suprapubic operation can be performed by a skilled surgeon in from twenty to thirty minutes from the time of the skin incision until

the lobes are enucleated and the incision closed. Even if it should take longer, as it sometimes does in either route, there should not be much danger under the anesthetic recommended by Dr. Belfield. Another thing which has very rarely been mentioned is the condition of the tissues surrounding the prostate. In suprapubic cystotomy we rarely see a pericystitis that interferes with the rapid performance of the operation from above. Prostatitis and periprostatitis, which are now generally recognized as the chief cause of prostatic enlargement, produce almost inseparable attachments between the rectum and the gland, so that it is very difficult and sometimes impossible to open up the space between the rectum and the prostate without serious damage to these tissue, even by Proust's method, erroneously called Young's unbloody route. Stones have been left in the bladder cavity in suprapubic and perineal prostatectomies, more frequently in the latter. If lodged in a diverticulum with a small opening, they may escape detection in a collapsed bladder from above or below. If stones lying free in the bladder are left behind in a perineal operation it is the fault of the surgeon who does not avail himself of the service of the cystoscope before the operation. If in the extremely rare cases in which the enormous size of a vesical protrusion does not permit a survey of the interior of the bladder, perineal prostatectomy were performed, and incidentally a stone was overlooked, it would speak rather for the poor judgment of the surgeon than against either method. From the time of Sir Henry Thompson, we have been taught that the prostate grows first into the bladder cavity and last into the urethra, and very rarely is there only a urethral protrusion in the form of a myoma or a fibroma. Therefore, we should choose the route which offers the nearest approach to the pathologic condition, and hence it is evident that the majority of these cases be operated on either along the line of Dr. Belfield's suggestion or by Poncet's cystostomy.

Dr. A. E. Halstead:—I have been a strong advocate of the suprapubic method. My experience has been rather limited as compared with that of some other surgeons, but I have come to the conclusion that about 80 per cent. of the prostates that we meet with in practice and which demand removal can be taken out best through a suprapubic opening. The large, soft prostates, that are quite common, or those of the mixed type of prostates, next most common, are surely most easily reached through a suprapubic opening. I have followed in my operations a technic quite similar to that advocated by Dr. Belfield a number of years ago, and have had no serious difficulties, so far as removing the gland is concerned. With regard to the objections raised against the suprapubic operation, particularly the danger of hemorrhage, I do not think they are well taken, because, if we are within the capsule of the prostate, the prostatie veins are in no danger of being injured and the enucleation can be made with practically no loss of blood. In the second place, drainage and the great risk of infecting the prevesical space I think is overcome if my method of operating is followed. Of course, there is a certain risk, but with a proper technic so far as draining the suprapubic area is concerned, the risk is a minimal one. In my operations I have secured perfect drainage of the bladder by siphonage without in any ease having infection of the prevesical space. In cases where the bladder is badly infected, I think it is advisable to make a perineal drain; but in the few cases in which I have resorted to this drain I have been rather discouraged, and I take it that my mistake was in putting in a rubber drain and not a metal one, as advocated by Dr. Belfield. While the patient had both a suprapuble and perineal drain, the lower one usually did not work well, and I never really understood why until Dr. Belfield suggested that it is a swelling of the parts which interferes with drainage. As to the length of time consumed in the removal of the prostate, the suprapubic operation surely does not take any longer than the perineal. The actual time consumed is anywhere from two to ten minutes in removing the prostate after the bladder has been opened. The time required for getting into the bladder is from ten to fifteen

minutes, so that the entire operation can be completed in twenty minutes, and that is as short a time as any perineal operation can be performed.

Dr. Edward F. Wells:—I would like to hear an expression of opinion as to the character of cases that should now be submitted to operation. I take it that patients with enlarged prostate and vesical infection, in which infection may be higher up, demand operation. Are there cases in which the operation may be requested, that is, in cases of early catheter life, for instance, in the first or second year, with very little infection of the bladder, and no infection of the tracts above, with competent kidneys, but in which the patient is required to use the catheter five or six times a day in order to enable him to relieve the bladder? It is true the patient may be suffering from disability, but as he is not in any immediate danger, what should be done? Are we in a position to-day to advise such a patient to submit to an operation of this character, performed suprapulically or through the perincum?

Dr. Alexander Hugh Ferguson: -I did not contemplate saying anything on this subject until this morning, consequently I have not had sufficient time to look over my eases or to look over the various reports I have received from patients on whom I have operated. But I have jotted down a few thoughts. I prefer the perineal route. I have had some experience, not very extensive, with the suprapubic route, before I began to do prostatectomy through the perineum. The preparation of the patient for either route is exactly the same. A diagnosis of obstruction can not sometimes be made until the finger is in the bladder through the perineum. Let me illustrate this: If the obstruction to the urinary flow is in one or both lateral lobes comprising the urethra laterally below the ejaculatory duets, of you open into the bladder from above you may find no elevation of the prostate whatever, nor cyidenee of obstruction, but on opening through the perineum you can quickly detect the prostatic obstruction and readily remove it. There are eertain prostatic conditions that are not operable from above. Frever admitted this in one case where it was absolutely impossible for him to remove the prostate from above and he abandoned the operation. His patient died. Postmortem examination showed the cavity he was digging in was full of putrid blood elots and urine. That elass belongs to the eirrhotie and often painful prostate. It is true such cases are not common, but they demand prostatectomy, and the only way in which we can successfully remove them is through the perineum. It is elaimed, by the advocates of the suprapuble route, that the only way in which we can do a partial prostatectomy is suprapulically. In that they are entirely wrong. I maintain that anything that ean be removed suprapublically can be removed through the perineum. Again, you have more control over hemorrhage by the perineal route than you have by the suprapuble. If there is simply a prostatie bar you can treat that better than from above by a simple prostatotomy, or biting it out with a suitable instrument. Let there be any or all deformities of the pathologic lobe, no experienced operator need hesitate to choose the perineal route for surgical treatment.

The total removal of the gland can be safely done through the perineum. Advocates of the suprapubic route remove more than the gland, they remove the prostatic urethra as well, and they have claimed that no harm comes from that. By the perineal operation we can sometimes save all the prostatic urethra, also the anterior portion of it, and can enucleate the gland from around it. I therefore claim the perineal route for total prostatectomy is more ideal and safer than the suprapuble.

It is further claimed for the suprapubic operation that there is more hemorrhage from the perineal. The greatest amount of hemorrhage I have had was in a ease operated on suprapubically, where I left a clamp on for twenty-four hours and nearly lost my patient. It stands to reason that when you go through the bladder twice instead of onee more bleeding occurs, let alone a consideration of site and relationship of the vesical venous plexus. It has been said by one distinguished American surgeon that the prostate is outside of the vesical eavity, just as is the appendix outside of the peritoneal cavity. There is

a great deal of difference, for the prostate is so much outside of the vesical cavity that the bladder never surrounds it. You can not say this of the appendix.

Siphon drainage of the bladder or drainage uphill is never completely successful. It is unnecessary to discuss this subject from the viewpoint of the surgeon. Drainage from the most dependent part is always the best in any part of the body. Rectal fistula takes place sometimes, but it is due to roughness or mistake on part of the operator. I have not had a urinary fistula as a complication in but one of my cases in which there was a stone in the bladder, with prolonged suppuration. In cases of long-continued suppuration of the bladder, in which a perincal prostatectomy is performed, a urinary fistula is likely to follow and remain until the cessation of suppuration.

A diverticulum with or without the presence of a stone may be present. A suprapubic operation on a ease with diverticula practically prevents us from safely dealing with them afterward by abdominal section, especially when a fistula is present. In two cases of tuberculosis of the prostate operated on, in one a fistula followed. I think probably there would have been a fistula in this case if the operation had been done suprapubically. I remember one case in Texas in which a suprapubic operation was performed for the removal of a large stone behind an enlarged prostate and urinary fistula resulting. The prostate was fully as large as my closed fist, and it projected until it almost touched the anterior portion of the vesical wall, where it was visible through the fistula and easily felt with the finger. I removed it through the perineum with less traumatism than I could have done suprapubically. I can not conceive of there being any more chance for infection from the perineal operation than from the suprapubic. I recall one case that was operated on by another surgeon three years ago suprapubically. Following the removal of the prostate by this route, the man had a stricture at the neck of the bladder which would only admit a filiform bougie. When I saw him he was in extremis; there was infection of the kidneys. With difficulty I dilated the stricture and drained the bladder. The patient died inside of forty-eight hours. A postmortem examination demonstrated that he had an annular stricture at the neck of the bladder which followed the suprapubic operation. Strictures from the perineal operation are extremely rare. I have had one case in a physician in which the stricture formed inside of six weeks. I did a perineal section, and then by paying attention for a short time to keeping the vesical neck open he was cured. The mortality is from greater from the suprapubic than perineal operation. I taink the mortality from the perineal route is larger than it ought to be, because surgeons who do the perineal operation undertake to operate on eases that the suprapulic men leave alone.

Dr. William Fuller:-I would like to say a word or two with reference to this subject, although I regret that I am not able to give an opinion regarding the respective merits of the perineal and suprapubic operations, as I have had but little or no experience with the latter method. It seems to me that nothing could be more desirable than perineal prostatectomy, as practiced and recommended by Dr. Ferguson. It is the quickest, safest and the best way of removing the enlarged prostate gland. There is one point, however, mentioned by Dr. Ferguson with reference to this operation, and which I have heard him mention before, that I could never quite understand. He says that in the perineal route he can remove the prostate gland without injuring the prostatic urethra. In my own cases I have not been able to do this. From the cadaver I have repeatedly removed the prostate gland, including the prostatic urethra, the bladder, the rectum, the lower end of the ureters and all the peritoneum covering these structures, and have never been able to dissect the prostate away from the other structures mentioned without doing great damage to the prostatic urethra. Dr. Ferguson may be able to do this, as he has just stated, and I bring it up for the purpose of having him explain how it is done.

Dr. Belfield (closing the discussion):—As Dr. Andrews has aptly said, the

operative removal of the hypertrophied prostate is undergoing evolution, and the process is not yet complete. It began here in Chicago nineteen years ago with suprapubic prostatectomy; its progress was interrupted by the castration diversion and the Bottini ghost-walk, but was resumed in the form of perineal prostatectomy six or seven years ago, thanks especially to Prout and Albarran in France, Ferguson and Murphy in America. One of the best results of the perineal operation is that it has disclosed to general surgeons the fact that prostatic hypertrophy is but one of several diseases to which the senile prostate is prone; and that prostatectomy should not be made without a preliminary differentiation between the cases that probably will, and those that certainly will not, benefit by the operation. No more potent argument for this could be furnished than the facts that less than half the prostatectomies heretofore performed seem to have cured the patients of their urinary difficulties; that even skilled surgeons have endeavored to enucleate small fibrous prostates; and that less skilled surgeons have performed prostatectomy on subjects whose bladder symptoms were caused by locomotor ataxia or even vesical calculi.

Perineal prostatectomy has been a valuable lesson in prostatic surgery; but even its creator, the French school, is looking for something better, something that will not leave 8 per cent. with permanent fistulæ, 3 per cent. with permanent incontinence and many others with a mass of cicatricial tissue compressing the deep urethra; in short, toward suprapubic prostatectomy as practiced by Freyer. Dr. Ferguson has been fortunate in escaping these distressing results of the perineal operation; as I have recently observed six cases of fistula and one of permanent incontinence following this operation performed by others, it would seem that these sequelæ are not rare. Freyer's failure to remove a fibrous prostate through the suprapubic incision is not, as Dr. Ferguson intimates, an argument against this operation; nor would I argue that Albarran's three failures to remove such prostates through the perineal incision should condemn that operation. All such experiences merely emphasize the necessity of recognizing the varieties of prostatic obstruction. The argument that the prostate, because extravesical, should not be approached through the bladder, seems scarcely convincing to those who usually approach the extraperitoneal appendix through the peritoneal sac. That an expert surgeon may make a perineal prostatectomy without discovering a stone of good size in a bladder diverticulum, has been brought to my attention in three cases. This could hardly have happened had operator's finger swept the entire bladder through a suprapubic incision.

Dr. Wells' question regarding the indications for prostatectomy must be answered in each individual case. In general, acute vesical infection must be reduced by urotropin, the retained catheter, etc., before operation.

The perineal operation has been thoroughly tried and found seriously wanting; we are looking for something better.

A regular meeting was held Dec. 6, 1905, with the President, Dr. Charles S. Bacon, in the Chair. Dr. William J. Mayo of Rochester, Minn., read a paper, by invitation, entitled "Radical Removal of Cancer of the Stomach," which was discussed by Drs. A. J. Ochsner, Arthur Dean Bevan, E. Wyllys Andrews, Alex Hugh Ferguson, Fenton B. Turck, Frank Billings and William J. Mayo. Dr. Frank S. Churchill followed with a paper on "The Diagnostic Value of the Leucocyte Formula in Pertussis." Dr. E. C. Riebel read a paper on "Hyperalgetic Zones in Gunshots of the Head."

THE RADICAL REMOVAL OF CANCER OF THE STOMACH.*

W. J. Mayo, A.M., M.D., and C. H. Mayo, A.M., M.D. Surgeons to St. Mary's Hospital.

ROCHESTER, MINN.

(Abstract.)

Cancer of the stomach has been a neglected field. To a large extent it has been treated by the medical men with a necessary mortality of 100 per cent. The

^{*} Read by W. J. Mayo, by invitation, before the Chicago Medical Society, Dec. 6, 1906

high mortality of radical operations and the difficulties of early diagnosis have been very discouraging. Since 1900 there has been great improvement in technic, which has markedly reduced the death rate, so that removal of the pyloric end of the stomach, which is the seat of cancer in nearly 80 per cent. of the cases, can be performed in the operable ease with a mortality of 10 per cent. or less, Delayed operations in which the expectation is palliation rather than eure, will, however, continue to give a high death rate, due to caehexia, hemorrhage and starvation. Even in these eases, if the operation is possible, the results are vastly superior to gastroenterostomy, as return does not take place, as a rule, until a year or a year and a half has elapsed, while the mechanical function is usually maintained to the last. Gastroenterostomy gives nearly as high a mortality and an average prolongation of life less than five months. The early diagnosis ean not often be made with exactness, and exploratory ineision of the doubtful case is absolutely necessary to determine the facts. The clinical signs and symptoms are of greater value than the laboratory tests in the early stages, but no means of exact diagnosis should be neglected and the ease should be judged on its merits as a whole rather than upon any one or two symptoms. Cancer developing on an old uleer is very frequent. Our most favorable cases have been those operated upon for supposed ulcer in which malignant degeneration has been found.

The growing frequency of operative interference for benign disease will have a great influence in developing better means of differentiation. In considering operation, the extent of the growth, its movability and glandular involvement should be noted on exploration. By the early tying of four blood vessels, the operation is rendered bloodless. All of the lesser curvature must be removed in every case, in order to secure the lymphatics of this region. On the greater curvature the lymphatic circulation is from left to right and the receiving glands are on the right half of the greater curvature, so that a larger proportion of this part of the stomach can be safely saved. This greatly aids the restoration of the gastrointestinal canal.

We have operated upon 321 eases of eaneer of the stomaeh. Ninety-four resections of the pyloric end of the stomach were done, with 14 deaths, or 15 per cent. In 62 eases traced, 15 were operated upon too recently to be of value, 6 failed to live six months, 41 lived from six months to a year, 27 are now alive; 20 lived from one to two years, 13 now alive; 12 lived from two to three years, 9 now alive; 5 lived from three to four years, 4 now alive; 1 lived five years. Thus we see that 5 eases lived over three years, 1 dying in three years and five months from recurrence in the liver. As but 17 who survived the operation were operated upon more than three years ago, we have 29 per cent. living three years, a showing which compares favorably with the operative results for cancer in other parts of the body.

In 139 eases of gastroenterostomy the death rate was 15 per eent., the average prolongation of life being less than five months. In 17 gastrostomies, the mortality was 17.6 per eent. Number of explorations, finding hopeless gastrie eareinoma, 71, with 1 death in the hospital.

DISCUSSION.

Dr. A. J. Oehsner:—Everyone, both in this country and practically everywhere else, who has taken an active part in the treatment of patients suffering from carcinoma of the stomach, knows of the help which has come to him through the work done by Dr. Mayo. This help has come in two ways: First, after having seen, studied and operated on so large a number of cases of carcinoma of the stomach, he has been able to show the profession what is to be found in a given case. He has cleared up the living pathology of carcinoma of the stomach. The work that Dr. Mayo, Mikulicz, Krönlein, Czerny and Robson have done has shown that the fear surgeons once had of the operation was to a very large extent unwarranted. The high mortality following operations for carcinoma of the stomach, in the early days, was due to conditions which no longer exist to a

very great extent, since the methods have been improved by these men. mortality, primarily, comes from the fact that many of these patients can not resist any operation well, and there is that mortality which comes after operation upon the patients with a slight amount of resistance; but aside from that, a large proportion of the mortality came from the fact that a great number of useless things were done during these operations. As Dr. Mayo has said this evening, there are four small groups of blood vessels, which can be controlled without any difficulty, to be disposed of in operating upon the stomach. They are so situated that they can be approached as easily as in performing a hysterectomy. These blood vessels can be easily ligated, and then we have a bloodless operation. A large portion of the mortality came from secondary complications of the lungs, from pneumonia. This was undoubtedly due, to a large extent, to unnecessary traumatism and consequent infection along the esophagus. That has been disposed of by the simplification of the operation. Again, Dr. Mayo's surgery of the stomach has taught us how to relieve many cases of chronic ulcer, which otherwise would have become cancerous, and has placed the surgeon in a position in which he can reasonably approach cancer cases, at a time when their successful treatment is a comparatively simple matter. The fact that, in non-surgical treatment of these cases, there is a mortality of 100 per cent., shows that every case that is saved by surgical means is just that much clear gain; and every surgeon with a considerable experience in treating carcinoma of the stomach has had some patients who are alive to-day and who would be dead if it were not for operation.

The element of shock to which Dr. Mayo has referred is one of the causes of the high mortality, but it has been reduced very materially by the simplification of the operation. Infection, which we dreaded so much ten years ago, has been eliminated, because it is one of the operations which can be performed without infection as easily as any operation in the whole range of surgery. Recurrence depends very largely upon the anatomic conditions of which Dr. Mayo has spoken. When we compare the anatomic conditions in early cancer of the stomach with those in early cancer in other portions of the body, we see that they are relatively ravorable, and what we must do is to advocate and perform an early operation so as to approach the condition while it is still favorable.

Dr. Mayo has spoken of the advisability of surgical consultation in these cases. I remember very well many cases in years gone by in which a surgical consultation was quite as useless as any other consultation, because we did not have the courage to operate on these cases; because we knew very little about the facts that should have been known; we had very little or no practical experience, and it is this enormous experience of Dr. Mayo's that has helped us in this matter, so that I believe the profession here, as elsewhere, is greatly indebted to him for this work.

Dr. Arthur Dean Bevan:—I am so much in sympathy with the presentation that Dr. Mayo has made of this subject that I hardly feel like taking up the time in discussing it, because I think this discussion might better be continued by the medical men here this evening. Surgeons are pretty unanimous in accepting the view presented by Dr. Mayo. It has now been demonstrated that carcinoma of the stomach, like carcinoma in almost every region of the body, if not in all, is to be regarded to-day as a surgical disease. I think, too, that the modern work of the last five years has been sufficiently encouraging to urge us on to more frequent operating than has heretofore been attempted.

The question that principally concerns us to-day is one of diagnosis. The question is whether in an individual case the evidence is sufficiently clear to warrant turning the case over to a surgeon. I am rather inclined to believe that medical men generally accept the views Dr. Mayo has presented. I feel, however, that they do not have sufficient confidence in the present means of early diagnosis to warrant them in turning patients over to surgeons for an exploratory operation on the ground that these patients probably have carcinoma. It is a rather fine line to draw; that is, a line that must be drawn by scientific medical men. When

does the evidence warrant an exploratory operation? And most of these operations are exploratory; that is, the eases which hold out the greatest hope are usually the exploratory ones.

I want to thank Dr. Mayo for his very instructive paper and to give way to some of the medical men who, I am sure, will add more interest to this discussion.

Dr. E. Wyllys Andrews: A few years ago we heard in this society a pessimistic paper from one of our surgeons on the subject of the radical treatment of eareinoma ventriculi, based on the idea that the arrangement of the glandular system was such that every ease of earcinoma of the stomach was doomed to regional infection, and hence hopeless. But it seems that a new face has been put upon the matter by American surgeons. The justification for the radical, in preference to the palliative operation, is based upon the results obtained and the relatively low mortality of pyloreetomy, compared with gastroenterostomy. I do not believe, however, that the time will ever come when palliative operations will be wholly abandoned. No amount of argument will convince me to the contrary, when I have seen patients whose lives were prolonged four and six months, and even one and two years, by such operations. I think the question of the advisability of prolonging human life is not at all a medical, moral or numanitarian one, for the patient himself to decide. We might as well say, "Never do a colostomy to relieve an obstructed rectum," as to say we should never perform gastroenterostomy to improve the nutrition of the patient and to prolong life in a ease of obstructed pylorus. Still, the pylorectomy is also a gastroenterostomy with all its advantages. Most of those who have discouraged radical interference have never seem Dr. Mayo do a pylorectomy, and they have something yet to learn. Dr. Mayo has evolved a method, as Dr. Ochsner has just pointed out, which is practically an aseptic operation. The vessels are tied in such a way that the field of operation is bloodless; the glands are removed radically, with the gastrocolic ligament; the stomach is clamped, so that there is not the slightest leakage as the dissection is being made. A running, not an interrupted, stitch is used, rapidly closing the cut-off end, which is thoroughly sterilized with actual cautery; the whole end is inverted by rapid suture work, so that the operation involves seareely more exposure of the mueosa than an inversion operation on the appendix; the two eut-off viscera are anastomosed to each other, while the whole field is surrounded by pads, so that not a drop of stomach contents escapes into the peritoneal cavity. In short, the operation, as he does it, is temporarily almost extraperitoneal. This sort of work is justified by the results obtained; it puts a new face on the matter altogether. When radical interference can show anything approaching the low mortality that has followed some of the methods of gastroenterostomy, it must be the operation of preference in all eases.

Dr. Alexander Hugh Ferguson:—There is not very much that I can add to the discussion on carcinoma of the stomach. I can do one thing, however, and that is to support Dr. Mayo and other surgeons in the position they have taken to-night on this subject. Dr. Mayo reported 500 gastroenterostomics before the American Surgical Association in July last, and as far as I am aware it is the largest number of cases from any one surgical clinic in the world. Gastrojejunostomy was performed in 421 cases, in 114 of which there was malignant disease. I quote this simply to show with what authority Dr. Mayo can speak on this subject. What he has said with regard to early operation in cases of cancer of the stomach should be taken to heart by every practitioner of medicine. To-night he reports a lamentable series of 71 cases of exploration, for which he could do nothing whatever except to tell them to go home, and not to tell them that they were going to die.

In the last two days I looked up 21 eases that I have had in the last three years, in which I simply opened the abdomen and could do nothing whatever for the benefit of these patients on account of extension of the disease. Those are the eases that come to us with a positive diagnosis. I am frank to admit that

in every case, with the exception of one, in which I opened the abdomen, there was a positive diagnosis of carcinoma of the stomach, and no fool could err in that regard. What we want is to get these patients earlier. I do not know how to make a diagnosis of carcinoma of the stomach so early that a patient is safe after a radical operation. I have been fortunate enough to operate upon one case that has been apparently cured by a pylorectomy, that is, the total removal of the pylorus and the cancer-bearing area. It was an early diagnosis and operation, because there was early pyloric obstruction. It would be a fortunate thing for the sufferers from carcinoma of the stomach if obstruction at the pylorus were the first symptom of their disease; then 95 per cent, of them would be saved from an untimely death. That case was, I believe, the first pylorectomy performed in Canada. It was done twelve years ago, and the man is alive and well to-day. I placed a Murphy button behind the stomach, connecting it with the end of the duodenum; nine years after this operation he had obstruction at the scat of the gastroenterostomy. Then a posterior gastrojejunostomy was performed by a surgeon in Victoria, B. C., and now the patient is well.

Dr. Fenton B. Turck:—The physician must ever be grateful to the surgeon for restoring a certain number of cases of carcinoma of the stomach, which are incurable by any medical means. I think we all agree as to that; but further, we owe much for the knowledge we obtain whereby diagnosis is made more clear and exact. The facts obtained will encourage us to attempt to differentiate more clearly between carcinoma of the stomach and that which is not carcinoma. There is no text-book analysis or other methods of diagnosis upon which we can act with any degree of certainty. There is no group of symptoms that represents carcinoma of the stomach, that can be found early enough, distinct from other conditions, in which carcinoma does not exist. Therefore, the impossibility of making an early diagnosis with certainty. If we go into the operating room of the surgeon and see him operate on patients we have previously examined, we will learn much that will guide us in our diagnosis and in our advice to patients. Personally, I feel I have gained considerably from association with surgeons in my own cases. The keynote of this discussion is the question of diagnosis-not simply the technical part of operative procedures, but the importance of determining whether a given suspected case may be carcinoma or not. If we take a certain group of conditions and symptoms where there may be a carcinoma or a benign obstruction, in either case one is justified at once in placing the case in the hands of the surgeon. If there is doubt in the beginning whether the condition is one of stenosis of the pylorus or simple atony of the stomach, this may be more clearly differentiated by appropriate treatment adjusted to the particular case. If under such special treatment the patient does not show prompt recovery. as experience has proved, then I would not hesitate to advise immediate exploratory incision. I have had many cases in which these doubtful conditions have been determined by associating myself with the surgeon, and not only doubtful diagnosis cleared up, but, by prompt and timely operations, the lives of some patients saved and others prolonged.

Dr. Frank Billings:—I am very glad to have been present to-night and to have heard Dr. Mayo's paper. I have not heard anything new, because I have heard it before in conversations with Dr. Mayo, and I knew what his views were in regard to this subject. The important points he brought out were, first, that the non-operative treatment of cancer of the stomach has 100 per cent. mortality. That is not anything new. Second, the operative treatment of cancer of the stomach has so improved in technic that the mortality of 60 or more per cent. many years ago has now been reduced to 10 per cent. or less. That puts an entirely different aspect upon the relations of the surgeon to diseases of the stomach. Third, he touched upon the diagnosis. Fourth, he touched upon surgical palliative treatment.

As to operative treatment, it is the only treatment, except palliative, that the physician can give. There is not any medical treatment, except that of trying to relieve the pain of a patient who has cancer of the stomach. Cancer of the

stomach, if it is not relieved beyond mere palliation by drugs, is a surgical disease. As to the diagnosis, we must all agree with what Dr. Mayo has said about it. There is nothing exact in our present methods, either clinical or laboratory. A good many findings in the laboratory have in the past been considered important, but in the light of our present-day knowledge they are not so considered. A few years ago we looked upon the chemical conditions of the stomach contents as important in the diagnosis, when, in fact, the chemical reactions of the stomach contents are of relatively small importance. The motility of the stomach is an important factor in separating medical from surgical cases. When the motility of the stomach is disturbed and stagnation occurs, it is either a medical or surgical ease. If it turns out to be a case of pyloric stenosis, it is surgical, If it turns out to be a case of diminished motility of the stomach, with a large pylorie orifice, it is usually medical. It may be at any time a surgical ease, but it is usually medical. The diagnostic methods of the laboratory help very materially in elearing that up. A great mistake in the past has been made in depending upon chemical methods and in keeping our patients for a long time under observation, when finally the chemical results were practically of no value.

As to palliative (surgical) treatment, I am very glad to have heard Dr. Mayo say what he did. I have had some experience with patients suffering from cancer of the stomach. I have had many patients upon whom gastroenterostomy has been performed. I have seen patients live for more than a year after it, they have been relieved of the stagnation, they have been made comfortable, they have gained greatly in weight, in general nutrition, and were happy for the timebeing; but they are few in number as compared with the greater number only partially relieved, and, as Dr. Mayo has said, the judge pronounced death after four or five months of a miserable existence. Right here I think the medical man has something to say, for the surgeon, after he has performed gastroenterostomy, does not take eare of the patient. We medical men have to ease these patients down to the grave. I agree with what Dr. Andrews has said, that the individual patient should have his choice. Well and good. Let him understand that, at best, if his ease is not operable or suitable for radical removal, it means to him only prolongation of a miserable existence, and if he chooses to take it, let him have it. I have three patients on my hands to-day who are dying from careinoma, and they have said to me more than once, "Why did you let me have that operation?" Dr. Mayo has thrown much light upon palliative operations, not gastroenterostomy, but pyloreetomy, with the removal of as many secondarily infected glands as possible. With this form of operation on the stomach, drainage is established and will continue until the death of the patient, and life is thereby undoubtedly longer prolonged than it would be by a gastroenterostomy.

Dr. Oehsner has used a word which I think is inappropriate, and I want to beg of him and of all surgeons not to use it again, namely, when he spoke of operating in the precancerous stage of uleer. Why not say operate for the preperforative stage of uleer? Why not operate for the prehemorrhagie stage of ulcer? I fully agree with what Dr. Mayo has said in reference to the interpretation of the elinical evidence by his medical colleague, Dr. Graham, who found in his histories of earcinoma 50 per cent, of eases of ehronic ulcer of the stomach. Dr. Mayo has associated with him a pathologist, who is able to throw out certain eases where histologic examination does not prove eancer. I believe what he says and in the work he has done; but I do not believe that a fear of eancer is the reason given for operation. He operates for chronic ulcer of the stomach for the reason that there may be conditions present which will interfere with the healing of that uleer: it may be a soil upon which cancer will grow. I believe, however, many men would be opposed to operating for a preeancerous condition. Would you cut off a woman's breast simply because she has an inflamed milk gland, thinking that it was the precancerous stage? Understand me, I am not finding fault. Dr. Ochsner knows what I mean. I do not like the term precancerous; it is a wrong one to use, and I hope he will not use it again.

Finally, I wish to reiterate what I have said, that carcinoma is a surgical disease, and that with the help of the surgeon we can now turn our eases over to him. I am willing to advise my patients to have an exploratory laparotomy made in doubtful cases; and yet I have heard surgeons say, more than onee, that we should never perform a laparotomy for diagnostic purposes. Now that the technic of the operation for cancer of the stomach has been improved so much, so that the mortality, according to Dr. Mayo's figures, may be less than 10 per cent., we can turn over our patients to surgeons without the danger of their being killed on the table. But how many surgeons will do these operations? I suppose all of those here to-night. The medical man has a great responsibility in these cases, beyond the mere fact of safeguarding the life of his patients. He is the one to say what shall be done, and who shall do it. Dr. Mayo has traveled to Europe and to the leading medical centers of this country many times, in order to perfect the technic of this operation, and consequently his mortality from operations upon the stomach is now less than that of most surgeons.

Dr. A. J. Oehsner:—I wish to repeat what I said a moment ago with reference to the precancerous stage of ulcer of the stomach. There is a condition of the stomach ulcer, in which it is impossible to demonstrate the presence of carcinoma, but in which one can be practically certain that a malignant condition will occur, precisely as in tumors of the breast, which occur in women over 45 years of age. The same is true in women a tew years past the menopause in whom we encounter recurrent uterine hemorrhages. These cases should be operated upon, although it may not be possible to make a positive diagnosis of cancer, because if we wait until this can be done, the patient is usually in a hopeless condition. There are cases in which one portion of an ulcer has been infected with carcinoma, while another portion is still a simple ulcer, as has been shown by Professor Fütterer. It is in these cases in which medical treatment has failed in which an operation will be of the greatest benefit.

Dr. Frank Billings:—Dr. Ochsner did not understand me. I did not discourage operating for ulcer of the stomach. My whole argument was against the use of the word precancerous. Does he use the word precancerous as applied to tumors of the breast? Does Dr. Ochsner use the word precancerous as applied to the removal of the appendix, when in only a few cases this organ becomes cancerous? Does he use the word precancerous as applied to operations upon the gall bladder, when fully 8 per cent. of the cases become carcinomatous?

Dr. Oehsner:-We do, as applied to the breast.

Dr. Billings:—You would not eall it precancerous if you removed a benign tumor from the breast, nor would you call it the precancerous stage. The only thing I urge is that you refrain from using the miserable word precancerous.

Dr. Carl Beck:—This controversy between Dr. Oehsner and Dr. Billings over the term "precaneerous stage" is important because it touches upon a point in surgical pathology. There is really a stage in which a common ulcer and a eareinoma can not be distinguished, even under the microscope, and I think that is the stage to which Dr. Oehsner refers and which he has ealled precancerous. The use of the term precaneerous, in this sense, in surgical pathology, is perfectly legitimate. It has been employed for a long time. It shows that a pathologie condition exists which excites suspicion, that the cells break through the basement membrane of the epidermoidal tissue, that they break through the basement membrane of the stomach, and this is what is called the precancerous stage. During this period operations yield the best result. With reference to Dr. Mayo's paper, it has opened up two new and important phases, one for the general practitioner and one for the surgeon. The one for the general practitioner has been spoken of in detail by the different surgeons and medical men. So far as the surgeon himself is concerned, there is one important point to be considered. We have hitherto relied too much upon European authorities, refraining from radical procedures for the removal of eancer of the stomach, and we have sacrificed too many patients by making palliative operations where we should have removed eaneer. This is the first time we have had a report of a large number

of cases from an American surgeon, based upon true surgical, pathologic knowledge, with good authoritative statistics, which can not be questioned in any way, where gastrectomy has been shown to be preferable to any palliative procedure. I have had an opportunity to observe a patient, upon whom I did a radical operation, a gastrectomy, five years ago for carcinoma. I had to do a secondary operation for carcinoma of the ovaries three years ago on the same patient, and during this second operation I examined carefully the stomach region and found it normal, showing that there has been an absolute cure effected in that case from the removal of the carcinoma of the stomach. The patient is now well.

Dr. Mayo (elosing the discussion):—I have, on a number of occasions, talked with both Dr. Billings and Dr. Ochsner on this subject, and I can assure you, from those private conversations with them, that there is practically no difference in their attitude. It seems to be purely a question of phrascology. In the early days you will recollect the difficulty we had with regard to the diagnosis of appendicitis. Now we expect a senior medical student to be able to make a diagnosis of appendicitis, and probably we would not pass him if he were not able to do it in the average case; yet some ten years ago, even less than that, I heard papers in which this question was not only discussed, but in which it was stated that the diagnosis of appendicitis was practically impossible, in a very large percentage of patients, sufficiently early for an "early operation" to be made. We have gone through the same controver y in gall-bladder surgery. I feel confident that the near future will show us methods of making diagnoses more readily than we do now, and that, as a consequence, a considerable percentage of gastric cancers will be sent to surgeons much earlier for operation.

Dr. Billings touched upon the probability of an ulcer of the stomach degenerating into cancer, and referred to the statistics of my colleague, Dr. Graham. The favorable cases of cancer of the stomach I have had to operate upon were those in which the operations have been started with the expectation of finding ulcer, but in which cancerous degeneration was found. It was these early cases that led us to take more and more interest in the surgical side of the subject. I would expressly disclaim any superior knowledge or skill in connection with gastric surgery. I have seen the operation done in many places in this country and abroad, and I do not believe there is anything in that statement, as applied to myself. I do not claim any part of the operation as it is developed to-day. Little points have been picked up here and there in the way of technic and put together. So to speak, we have made a package of many other operators' ideas and tied them together with a string, and about all we really own is the twine. There is one other point that comes up that is very important, namely, we can not always make a pathologic diagnosis. Dr. Billings said that there are such cases and I agree. It does not make any difference to the patient if he has pyloric obstruction and is going to die from it. He has the right to be operated upon because it is the only way he can be relieved, no matter what the nature of the obstruction. It must often happen that we can not make a pathologic diagnosis, and I think any gentleman who says that we should not operate without such knowledge is in error. I do not see how it can be otherwise, because a patient may come to you having the appearance of cancer and upon exploration there may be found an ulcerated mass or even a well-formed tumor, the patient presenting cachexia, loss of blood, absence of hydrochlorie acid, etc. Before operation you are confident it is carcinoma, and yet it proves to be inflammatory. Fifteen such cases were eliminated from the statistics in my paper, because, pathologically, as shown by the microscope, they did not prove to be carcinoma, but ulcer. In the statisties of Wölfler we will find long ago cases were operated on by gastroenterostomy with a supposed cure of carcinoma, the patients living many years. We must occasionally make an operation in which the pathology is not elear before we operate: it is made clear at the operating table, but we do know beforehand that a condition exists which can and must be relieved surgically.

Adjourned.

The regular meeting of the Chicago Medical Society was held on Wednesday, December 13, with the President, Dr. C. S. Bacon, in the chair. Dr. William L. Rodman of Philadelphia read a paper on "Tumors of the Breast."

BENIGN TUMORS AND CYSTS.

W. L. RODMAN, M.D. PHILADELPHIA, PA. (Abstract.)

Much confusion has existed in regard to the classification of benign growths of the breast and this is largely due to the fact that surgeons failed to classify them upon a strict histological basis. The multiplicity of terms applied to the growths containing both epithelium and fibrous tissues has been especially confusing. Ribbert has recently employed the term fibro-epithelial to designate all such tumors and has separated the group into two types, fibrous and epithelial, the former being sub-divided into fibroma, myxoma and sarcoma, the latter into fibrocyst-adenoma and papillary cyst-adenoma. The adjective periductal is prefixed to each form of the fibrous type to denote its chief constituent, the transparent tissue found around the acinous ducts. The proper treatment of all these growths is removal. If small, they may be excised; if large, they are best removed by the operation known as plastic resection of the breast, which was devised by Gaillard Thomas and recently improved by Warren. In addition to cystic degeneration of sarcomata, fibro-cyst-adenoma and papillary-cyst-adenoma, which often occur, single and multiple cysts may be formed during involution of the breast. There is a normal increase of connective tissue, during the process of involution, as a result of which the ducts and acini may become compressed, so that dilatation and cyst-formation occur. This interference with normal conditions often leads to proliferation of the cpithelium, which may be so profuse as to constitute malignancy. The most rational treatment is complete extirpation. I am unalterably opposed to treating them by aspiration.

Sarcoma of the breast is a comparatively rare affection, constituting not more than 5 per cent. of all mammary tumors. It usually affects young women, though it may occur at any period of life. I recently had a case in a girl aged 11. It is my belief that traumatism plays a more important rôle in its production than in other mammary tumors. The clinical diagnosis of small sarcomata may be impossible. From carcinomata, they are to be differentiated by the absence of lymphatic involvement, fixation to the skin and retromammary tissues, and retraction of the nipple. Their more rapid growth and the fact that they occur most frequently in girls, or women who have not reached middle life, may serve as points of differential diagnosis. When the stage of ulceration is reached the protrusion of the fungous sarcomatous mass will make the nature of the growth apparent. In pregnant women sarcoma of the breast pursues an exceedingly rapid and malignant course. Treatment consists in complete excision. It is always safer to clear the axilla. Of the tumors affecting the breast carcinoma is by far the most common. Recent investigation shows that it is increasing in frequency, and there is indubitable evidence that the increase is real and not merely apparent. Races formerly considered practically immune are now suffering from its ravages. notably the American negro. Moreover we are finding it more frequently in young subjects than was formerly the case. In regard to etiology little definite can be said. Much has been written about the precancerous state, the influence of age, the effect of injury, heredity, the transformation of benign into malignant growths, etc. It is a well known fact that a vast majority of cases occur in middle life. It must nevertheless be borne in mind that young women are affected more frequently than they were formerly believed to bc. I have operated on five cases of cancer in the last seven years, occuring in patients aged 23, 25, 25, 27 and 28, respectively. All but one, and that in the case of the patient aged 23, were typical schirrus growths. In the Tubingen cases analyzed by Mahler the youngest patient was 26.

The exact etiological relation, if there be any, which exists between traumatism,

chronic inflammation and mammary abseess, and caneer is not known. As eon: cerns heredity, Dallet's statistics, based on a large number of cases, show that family history of eareinoma is present in 5 to 10 per cent. of all cases. It is my belief that the tendency to minimize the predisposing influence of heredity has been earried too far. In my own experience, at least one third of the cases of cancer of the breast which I have operated on have been preceded by one or more cases of eancer, usually of the breast, in the family. A peculiar soil is inherited, and if the proper seed, it may be living agent or not, falls upon it, earcinoma may develop. Although granting the possibility of the transformation of benign into malignant growths the probability of such an occurance has no doubt been overestimated. Recent statisties also tend to show that carcinoma of the breast is more common in married women, and especially those who have borne and nursed children, than it is in single women. I can not agree with those who believe that it is equally common in the single and married, the sterile and fruitful. Certainly some consideration must be given to results derived from the examination of hundreds of recorded eases, as, for example, those of Gulike, who found that 982 patients treated in von Bergmann's clinic, 90 per cent. had borne children. To the general practitioner, who sees comparatively few cases of this disease, but who sees these few at an earlier period of their evolution than it is usually the good fortune of the surgeon to encounter them, a thorough knowledge of both subjective and objective signs is of the greatest importance, inasmuch as the life of the patient depends upon his alertness in diagnosis and his promptness in referring his ease to a surgeon.

First of all, it is important to remember that the onset is usually not attended by subjective symptoms. Mammary cancer may be far advanced before it causes much suffering. It is only when the tumor attains a considerable size or compresses nerve trunks that a sense of heaviness and weight in the first instance, and of lancinating pains radiating to the arm, shoulder and back in the second, will be experienced. In regard to the exact time at which glandular involvement oceurs, statistics show that palpable enlargement may be demonstrated between the eleventh and eighteenth months. Such statistics are of very little value, for the reason that glands may be diseased and yet not be perceptibly enlarged. It may be safely stated that at least 65 per cent. of all patients show signs of palpable glandular involvement when first seen by the surgeon. As this percentage decreases the percentage of cures will increase. Regarding diagnosis, if better results are to be had in the future they will be obtained by earlier rather than more extensive operations. Inability to make early diagnosis and lack of faith in the power of surgery to cure, are responsible for the general practitioner's delay in sending his cases to the surgeon. The age of the patient and the presence of a hard nodular tumor of slow and painless evolution will not always justify a positive diagnosis of carcinoma. The location of the tumor is of great significance. Malignant growths are most frequently found in the upper and outer quadrant, lower or axillary quadrant and behind the nipple. Benign tumors are always movable, distinctly encapsulated, and do not affect the skin. In doubtful eases I prepare for a complete operation, but first remove a portion of the growth and have it examined by a competent microscopist, who is present in the operating room prepared for rapid, though accurate work. In this manner a report can usually be obtained within ten minutes and if the tumor proves malignant the complete operation is performed. When operating apart from a well equipped hospital the maseroscopie appearance of the growth, its color, consistency, and particularly the presence or absence of a capsule, will usually prevent a mistake in diagnosis. All tumors removed from the mammary gland should, of course, be examined miscroseopically as soon as possible.

The prognosis depends upon the time at which operation is performed and the thoroughness with which the diseased structures are removed. Since the extensive operation practiced by Halsted, Meyer, Stiles, Keen, Lennander, myself and others have come into vogue the percentage of cases remaining free from recurrence at the end of three years has become larger. The highest percentage of such cases is 50 and as it is obtained only by those surgeons who do the complete operation

it is a conclusive argument in favor of the removal of all accessible tissue which can possibly be diseased. Volkmann's three-year limit, however, should be extended to at least five years.

As to operative mortality my statistics show less than 1 per cent. In regard to operative technic, I make my incision include the skin over the entire breast, thoroughly exposing the pectoral muscles from origin to insertion and completely uncovering the axilla. I remove the muscles from insertion to origin, as by so doing the axilla is uncovered at once, and can be cleared from above downward, thus insuring a more complete dissection, obviating the presence of a large pendulous mass containing the breast and permitting better control of hemorrhage. Warren's incision is probably the best in the majority of cases, when modified by a second inverted Y cut above as well as below, it allows a more extensive removal of the skin than would otherwise be possible. Drainage is always employed. In all my cases, movement of the arm has been fairly well preserved.

DISCUSSION.

Dr. M. L. Harris:—The very excellent work which has been done in this field by Dr. Rodman is well known to all surgeons and we are to be congratulated on having this opportunity to hear the excellent and comprehensive paper he has given us.

Many of the benign tumors of the breast are of great importance, and while this point has been touched on by Dr. Rodman, as have practically all points I will touch on, still I wish to emphasize some of them. First, in relation to the benign tumors; one of these which has been classed as a chronic interstitial mastitis with cystic formation, is of extreme importance because it is a condition which is progressive. It begins in one lobule, gradually extending until it involves the entire lobule and then other lobules, and if it persists long enough it eventually involves the whole breast. This condition is not modified by any known treatment, therefore as soon as it is recognized the lobule involved should be removed to prevent an extension of the trouble to the remainder of the breast. Another point is the early diagnosis of carcinoma. So often we hear it said that because the tumor was not painful it was not considered to be malignant. When we ask our patients what first called their attention to the growth we nearly always learn that it was discovered accidentally. Pain is almost never the initial symptom. Therefore, we should not consider pain as of any importance in the early diagnosis of carcinoma. Another point is the enlarged glands. Dr. Rodman said that in only one case did he fail to find the glands enlarged. I have yet to see that case where the axillary glands, one or more, did not contain metastases. Of late years I have made it a practice to examine all the glands removed from the axilla, and I have invariably found, in one or more, metastases. This means that the glands should never be allowed to remain, no matter how early the operation is performed. The little nodules that we occasionally see in the lymphatics of the skin is another point. It is very common to find these nodules, and they are, of course, carcinomatous. These cases are always of serious prognosis, because the metastases are so far removed from the primary nodule that they require very extensive removal of the skin of the breast and surrounding parts in order to prevent a recurrence. It is remarkable how little embarrassment there is in the function of the arm after removal of both pectoral muscles. I have removed both breasts and the muscles and everything on the front of the chest and yet had free motion preserved in the arms. It was wonderful how these patients could use their arms and how hypertrophy of the clavicular portions of the deltoid muscles replaces the lost pectoral muscles.

Dr. John B. Murphy:—I wish to express my personal appreciation of the pleasure of listening to Dr. Rodman's paper. It was in consonance with what one would expect after having read that epoch-making paper which he read on this subject before the British Medical Association. That, I believe, was the most masterly presentation of the subject that has been written up to this time. Tonight he has merely touched the salient points of operative significance. The points which he makes to-night that are particularly impressive are: first, his

clean-cut classification of the lesions from their anatomic and embryologic basis; second, the relation of the operation to the pathologic condition; third, that radical operations are not to be performed on the breast merely because the patient has a "tumor" of the breast. There are tumors, and tumors, and tumors of the breast and they must be operated on guided only by the pathologic conditions present. I think this is the most important feature in his paper. The indiscriminate amputation of the breast with axillary excavations, which has been carried on for a great many years, certainly reflects no credit on the medical profession. The method of attack of cysts of the breast which he has described is a most advantageous one. The relation he emphasized between severe trauma as an etiologic factor in sarcoma and continued and repeated trauma in mild carcinoma was also a striking point in the paper. The conservatism of his operation in carcinoma of the breast is emphasized by the enormous radical operation which he performs when it is necessary, but not regularly and habitually.

Another matter which was brought out very foreibly is the immediate or remote manifestations in the glands. The eaneer manifests itself in the glands apparently early or late in relation to the amount of connective tissue that is deposited around the first erratic basement membrane penetration by epithelial eells. How soon this is nobody knows. We do know, however, that some people offer greater resistance to cancer than others; but whether glandular metastasis occurs in a few weeks or a few months we do not know. We know that the hard variety is much slower in disseminating itself into the lymph spaces than is the soft variety, and it is some time, therefore, after the aberrant epithelial cells penetrate the basement membrane before they are transmitted to the afferent neighboring glands. The class of patients who generate considerable connective tissue at the original focus of disease also offer in the glands the same relative degree of resistance. In a soft, non-resisting breast you will find a soft, nonresisting gland. All that brings us to the practical consideration, what is an early operation for carcinoma? An early operation for carcinoma will not be determined until we determine how soon the cells are transmitted from the original penetration of the basement membrane to the first gland. What is practically an early operation is an entirely different proposition, as is shown by Dr. Rodman's results of 50 per cent. of apparent cures after three years, in the cases operated on at all early. This interpreted means that from a practical standpoint there is an early period for operation, and that early period for operation is, in the scirrhus case, a comparatively long time after the onset, while in the rapidly growing mollient case it is an extremely short time. The obligation resting on the general practitioner is to have a definite positive diagnosis made even if necessary by an exploratory mammary operation, the same as an exploratory abdominal operation, and this should be done as soon as the tumor is recognized.

Dr. Rodman, closing the discussion:—I feel that the usual courtesy and generosity of the Chicago profession has exceeded itself to-night; that you have been too kind in what you have said about my paper; nevertheless, it is pleasing to have one's views shared by the representative men of this most representative city. I am very pleased, indeed, with the discussion of my paper, and there are many points on which I would like to speak, but the hour is late.

I agree with what Dr. Harris said about the axillary glands. While I did state that I found a single case in which there was no enlargement of the glands, in another part of the paper I stated that it was a case of adenocarcinoma, a variety not so likely to be followed by early involvement of the glands. I was particularly pleased with what Dr. Harris said about the free removal of the skin. I have insisted on this being not only one of the most essential points, but the most essential point in an operation for cancer of the mammary gland. Regional recurrences occur in the skin more often than anywhere else, therefore the small elliptical incision, which too many surgeons make even at the present day, is responsible for these recurrences. Important as free removal of the muscles is, important as free axillary dissection is, both are secondary to a free

removal of the skin, and the first advance that was made was in the operation of Moore and Gross which comprised a free removal of the skin.

I fully agree with the position taken by Dr. Murphy in regard to the course of hard and of soft eaneer. I said practically the same thing in my paper, but did not say it as well as he has done. I said that soft caneer may be fatal in two or three months and that hard cancer, at times, runs a comparatively benign course. That, of course, is a very important thing in the pathology of these growths. I also believe fully, as he does, that the difference between the etiology of careinoma and sarcoma is that in sarcoma there may be one sudden act of violence or trauma, while in earcinoma it is a constant irritation. I am glad that Dr. Murphy approves of plastic resection of the breast, introduced by Warren in his oration on surgery delivered before the last meeting of the American Medical Association. I practiced it three times in the last month and it is a very satisfactory operation. I believe that we can all save mammary glands that hitherto were sacrificed. It preserves the symmetry of the breast and many women will submit to operation now knowing that the breast can be preserved and symmetry maintained, when otherwise they would not submit at all.

I hope Dr. Bevan is right when he says that statisties at the present time are, perhaps, different from what they were two decades ago when Gross and others compiled them. I hope it is true that the number of cases of caneer of the breast is decreasing, relatively, rather than increasing. I believe, though I should like to think differently, that if the old statisties showing 82 per eent. of cancer are not right they then should be raised rather than lowered. I believe the statisties are about right as presented. Of the three benign growths I saw in one mouth, two were operated on upon the same day, and it had been a year since I had seen a benign growth. I am safe in saying, I think, that I see at least ten cancers of the breast where I see one benign growth. I wish it were different, and I have tried to feel so, but my experience points the other way. The point made by Dr. Bevan as to the infiltrating nature of these tumors is one of the best made tonight. While I hold that every man should under all circumstanees submit every tumor of the mammary gland to microscopic examination, still one can, when operating apart from a well appointed hospital, tell pretty well, macroscopically, the nature of the growth-whether it is benign or malignant. The infiltrating nature of the growth is most important. Add to this the presence or absence of a eapsule, and supplementing this with Stiles' nitrie acid test, will enable one to avoid failure in nearly every ease, but one is not justified in reporting a ease as cancerous until the miscroscope has been resorted to.

I fully agree with Dr. Bevan as to the question of ineisions. I think that no one should hold that his incision is the only one, although we get into the habit of employing nearly the same incision. Dr. Senn has one that I like very much, but there are half a dozen incisions that are equally good. As to the enlargement of glands above the clavicle, I am sure Dr. Bevan is right when he says that there are not many eases, in which there is palpable enlargement of the glands above the elaviele, that are saved, and yet there are a few, and if there are any then we are not only warranted but it is our duty to explore that region and clear out the glands, because it does not add to the danger of the operation. Very few of us have done that in the past. It is only within the previous two years that I have been doing it with anything like regularity, and even now I do not explore the elavicle in every case; yet in five of my last six eases the supraelavicular triangle was explored, though I found enlargement in only one case. If the tumor is situated superiorly it is possible that it is drained by the chain of lymphatics spoken of by Poirier, which empty into the supraelavieular glands, and it is our duty in every such ease to make the incision above the elaviele. I also agree with what Dr. Bevan said about the x-ray. I hold that it should be used, but only supplemental to operation. The risk of the operation is certain and definite, and the hazard of delay is indefinite and immeasurable. No one has the right to keep a tumor of the breast under the x-ray waiting to see how it is going to turn out. It is impossible to eure these tumors with the x-ray, and valuable time may be lost in running after false gods. Let us hold to that which

has been proven true and on which we can depend, and let us use the x-ray as

supplemental to operation.

I am very glad, indeed, that Dr. Ochsner spoke of periductal sarcoma as fully as he has. The plates I showed give a good idea of what Dr. Warren classified as periductal sarcoma. Dr. Oseliner has elucidated the subject so well that it would seem unnecessary for me to say anything further. I also recognize and gratefully acknowledge what has been done in demonstrating the various lymphatic channels and how they are blocked in operations on the breast. In fact, to improve operations of this character, we must appreciate fully the anatomy of the breast. Until we get rid of the old teaching that the breast is a small organ confined to a few ribs, and that a few lymphatics run from the nipple to the axilla, we will never do good work. I do not believe that I am optimistic in saying that those doing the most complete operations get 50 per cent. of ultimate cures. A few years ago we were staggered by the original publication of Halstead, where he claimed 40 per cent., but I am certain that 50 per cent. should be the minimum if these cases are sent to the surgeon as early as they should be. If you can get 80 per cent. of cures in carcinoma of the lip, why should not an operation rightly done on the mammary gland give a percentage of fifty. It seems to me conservative to claim 50 per cent., and while my own series of private cases has been small I am satisfied that unless there should be late recurrences, which I do not expect, the permanent cures will be more than 50 per cent. It is difficult, next to impossible, to have hospital cases for a sufficient length of time to make it desirable to include them in our statistics. I have therefore made no attempt to do so. All private cases have been carefully and easily traced and not a single one included that has not passed the three year limit without recurrence.

Dr. George E. Shambaugh read a paper on "The Blood Supply to the Inner Ear," which was discussed by Dr. J. Holinger, who said:—Dr. Shambaugh is the first investigator who followed in the tracks of Siebenmann in the study of the blood vessels of the labyrinth. The latter showed that the nutrition of the membranous labyrinth is independent of the nutrition of the surrounding tissues. Siebenmann based his statements on the examination of adult human ears, while Dr. Shambaugh based his arguments on the examination of labyrinths of animals in the early stage of development when the labyrinth is still in a primary cartilaginous condition. There is a great difference between the developed and the undeveloped ear and we must not extend conclusions drawn from the appearance of the ear in its earliest developmental stages on the adult human ear and draw clinical deductions therefrom. Dr. Shambaugh's work is good, and I am very glad that a member of the Chicago profession is the first in the world to work

successfully in this field to any extent.

Adjourned.

A regular meeting was held Dec. 20, 1905, with the President, Dr. Charles S. Bacon, in the chair. Dr. T. J. Sullivan presented a clinical case illustrating suprapubic prostatectomy. Dr. William T. Belfield presented four cases illustrating prostatectomy. (See page 156.)

DISCUSSION.

Dr. Frederick Leusman:—I do not think the efforts of the two gentlemen should pass without some form of recognition. I regret the absence of so many of our friends who have in years gone by come before this society and reported their cases of prostatectomy done by both methods. We all know that prostatectomy has been a hobby on the part of the general surgeon, as well as the genitourinary surgeon. It has been considered the operation for the class of cases requiring it. The general surgeon and the genitourinary surgeon do not do any better than anybody else. It is human nature for us to go along stumbling and sometimes we stumble right, and sometimes we stumble wrong, and those of us who have not had the opportunity to be at the head of the Cook County Hospital and of other semi-charitable institutions, must get along as well as we can in doing these operations. We have listened to the men connected with such institutions at previous meetings in a humble, faithful and believing way, and we have been told that perineal prostatectomy is the salvation of the old fellow with prostatic

culargement. To-night we have heard a new song, and it is a master who has sung the song. Dr. Belfield is an authority on this subject and is able to speak authoritatively. He has been doing this work for twenty years and has had a large experience in this work, and I am glad to have heard him take a conservative position. I regret that the general surgeons and the genitourinary surgeons are absent tonight. They ought to be here to relate their latest views. As to perineal prostate etomy, I have some across eases indirectly more frequently than directly that have been operated by famous surgeons with such disastrous results as Dr. Belfield mentioned. Dr. Belfield mentioned three forms of senile prostate—the selcrosed prostate, which can not be operated on; the adenomatous prostate, which ean be operated on; the eaneerous prostate, which ought to left alone. In regard to the suprapubic ineision, we have certainly received some valuable hints. Dr. Belfield spoke of an easy way of getting into the bladder, introducing a cystoscope and seeing in there. Probably this operation will not displace suprapuble cystotomy, and for my part I do not see why it should. You simply make a little hole in the bladder large enough to introduce your finger and look at the parts. Dr. Willy Meyer of New York a few months ago was to perform two prostateetomies at the Mercy Hospital. One of these operations was made nicely, it being done suprapubieally. In the other ease by means of the suprapubie ineision and oeular inspection he discovered cancer, thus preventing an unnecessary prostatotomy. This maneuver of Dr. Belfield with trocar, cannula and eystoscope is very ingenious, but I do not think it will take the place of the ordinary suprapubic incision and ocular inspection in many cases. I do not think that the suprapubic makes more trouble for the patient, nor do I think it takes much more time than this new device. It is largely a matter of experience. In regard to the removal of the prostate, all who have done this work understand that if the enlargement projects into the bladder the suprapubic method is the only one, and if it is a hard prostate the operation is a comparatively easy one.

The discussion was elosed by Dr. Belfield.

Dr. Carl Beek presented a patient upon whom he resorted to a plastic reconstruction of the lower jaw after total excision.

PLASTIC RECONSTRUCTION OF LOWER JAW AFTER TOTAL EXCISION.

CARL BECK, M.D. CHICAGO.

The pathological conditions which call for a total excision of a lower jaw are not common. Our literature contains only a small number of authentic cases, and Weber's table mentions twenty. Since that time a number of cases have been published. This paper deals neither with pathology nor technic of the operation, but with the question of plastic reconstruction. The consequences of the total excision of a lower jaw manifest themselves in two directions, the appearance of the face, and the function. Granted that the immediate results of a total excision were good, and that an ideal wound healing had taken place without complications, there remains a disfigurement and an impairment or total loss of function.

The lower jaw forms the firm support for the chin and for the lateral portion of the face, and when it is excised the chin retracts, and the sides of the face sink inward, and a shape of the face results which gives to the person the appearance of a typical agnathia, or eongenital defect of the lower jaw. The nose and the upper jaw appear like those of an adult, while the chin looks like that of a child; the checks bulge out under the cyclids, and are hollow behind these projections, parrot-like, a very unsightly appearance. More important, however, are the consequences concerning the function. Muscles retract in the direction of their attachments; the lower lip is thrown out and downward, like an ectropium, and is no longer able to retain the saliva in the mouth. A constant dribbling of saliva, with disintegration, infection and foul odor is the result. It is impossible for the patient to close the mouth firmly; the movements are minimal and without force. Of course, mastication is impossible, and the speech considerably impaired. Breathing becomes month-breathing, with all its consequences upon the accessory cavities of the mouth.

With the best operative result, therefore, the condition of a patient after total excision of a mandible is anything but enviable. No wonder that the surgeon hesitates before he undertakes an operation of this kind, and the indication to perform it must be a stringent, a vital one if he decides to excise a whole jaw. Theoretically, only a few conditions could call for this, and they are fortunately very rare. In malignant growths the recurrence will be very apt to shorten and mitigate such disastrous consequences, but in benign conditions we have to strive to prevent them. It was the merit of a friend surgeon, Claude Martin of Lyons, to have studied means and ways to overcome these disturbances, though he was not the first one to try it. Even in partial excision of the jaw some of those dreadful symptoms are feared, and as partial excision is more common, the preventive measures were first used and recommended for them. Claude Martin's merit lies in the fact that he recommended, to prevent these complications and bad results, the use of appliances at the time of operation to prevent retraction and to prepare the stratum of the excision for the future permanent prosthesis or plate of the dental surgeon, by using an immediate prosthesis during the operation. Of course it requires the skill and the experience of a Claude Martin to judge, and prepare beforehand, of the size, shape and form of the immediate plate or prosthesis, and the critics of his methods, who are many, complain of this difficulty, even impossibility of accomplishing the desired effect. But Claude Martin has proven by more than 150 cases, which he reported a few years ago, that he could accomplish a great deal, even ideal results. He was kind enough to send me, through my friend Dr. Carrell, two jaws which he finished as models for two of his partial resections, and I demonstrate them here as I obtained them from him. His original article on the subject, some twenty years ago, is well known to surgeons, but he has improved his method in one very important feature. viz., in the attachment of the prosthesis to the stump of the jaw with double small plates in the shape of an X, and by attachment of what he calls ailettes, small wings to prevent the lateral displacement of the jaw. Partsch of Breslau and Boennecken have made changes by using Hauseman's splints or wire supports, but it seems to me that these changes are trivial. Bardenheuer of Cologne has suggested and practiced an osteoplasty, but those who have tried such a method are not very enthusiastic about the final or even immediate result.

If we ask ourselves in how far such a Claude Martin splint may be of value and use in total excision, we may assume that done by a careful plastitician they would prove equally good. Unfortunately, I have had no chance to employ it in my case, because I did not perform this excision, nor did I think it advisable to use it when the case came under my observation for the correction, for reasons I shall give in the history of the case. But if I ever should have to do such an operation I certainly would deem Martin's splint the best method of preventing the con-

sequences of the excision.

The case I present to you is in many respects a highly interesting one, and it has many features which are of equal importance for the general surgeon and the dentist. The young lady, a school teacher, came to me, recommended by Professor Goslee, of the Chicago College of Dental Surgery. for surgical correction of a deformity. He had tried every possible method known to him to correct it, but failed. Without going into unimportant detail, her history was as follows: She relates that she began suffering about four years ago with toothache in the region of the lower incisors. Small periosteal abscesses formed, were lanced, but left fistulæ which kept on discharging. She was under constant care of a dentist until about three years ago she became suddenly very ill, with fever, chills and a swelling of her lower jaw. A physician was called, and he incised the swelling, with the result that some pus escaped, but evidently he was not satisfied with the result of his interference, for he advised her to go to a hospital and to have more extensive operation done for her ailment. She was anesthetized, and when she awoke she was told that a thorough operation was done. The specimen removed showed that there was no indication for a total excision, though there was quite an extensive necrosis, and that the total excision was done through a mistake in the diagnosis, and ignorance of the pathologic condition. The only excuse, I think, could be that the operator thought he had to deal with a malignant growth, and that he would extirpate as much as possible for fear of recurrence, but even a sarcoma of the middle portion of the jaw would not call for a total excision of healthy jaws, as these are. The result was that the chin fell together and inward, that deglutition movement of the jaw was impaired, and constant salivation was the result. The young lady who was so disfigured and who could not be well understood, was temporarily suspended and threatened to be dropped entirely from the list of teachers. This, and the consequent discomforts, prompted her to seek help from the dentist, and Professor Goslee tried with plates of different sorts and ingenious devices to overcome the difficulties, but no plate could be retained.

When I first saw her I intended to follow Claude Martin's plan, and by an incision to enlarge and stretch the searred tissues, and to implant one of his splints to prepare a bed for a dental plate. But after studying the conditions and considering the fate of foreign bodies which under similar conditions I had brought into the tissues, particularly the celluloid and coutchouc plates in the nasal cavities for saddle nose, the metal tripods in depressed noses, etc., I decided in favor of another method, which proved not only successful to a certain degree in eosmetie, but above in all functional, respects. I used paraffin injections. At first I tried it in the preauricular spaces to satisfy myself of the tolerance of the tissues towards paraffin; gradually I filled the space which the jaw had filled before with paraflin by a number of injections, introducing as much as was necessary to imitate the shape of the jaw. The result was surprising. With some difficulty I eould prevent the paraffin from spreading indiscriminately in the museles of the cheeks, and forming irregular lumps, but finally 1 succeeded in obtaining, not an ideal, but a fair result. Fortunately the Doetor had overlooked in his excision one small strip of periosteum, which formed on one side a small spicule of bone of about one inch in length, and this little piece of bone at the base of the tongue has served very well to place against it a large lump of paraffin to bring the chin forward, so that the profile of the patient is tolerably improved. The function of the jaw, deglutition, and the speech are also improved. Movements are possible to a certain degree. She is again back teaching school. During her next vacation we shall endeavor to form a small projection within the mouth cavity by injecting paraffin under her mueous membrane, to form a ridge, on which Dr. Goslee ean place a plate for the lower jaw.

In conclusion, I would say that if an absorption of paraffin should take place, it can be replaced by a single and painless and absolutely harmless injection.

DISCUSSION.

Dr. Edward H. Oehsner:-Dr. Beek is to be congratulated on the excellent result he has obtained in this case. When I saw the announcement of the subject on the program I was eurious to see how he was going to solve the problem. He has certainly done it in a remarkably good way. The ease brings up two very interesting subjects. One is the necessity of not doing early thorough operations for osteomyelitis of the jaw. In this case an all too thorough operation was done, and we see the terribly disfiguring result. Three years ago I saw a patient with osteomyelitis of the lower jaw who subsequently lost fully two-thirds of the lower jaw, but who, with conservative treatment, got a good result. Though he lost all the teeth of the lower jaw, he was not disfigured a particle. In osteomyelitis of the jaw one must follow the same rule that one follows in other forms of We must leave the sequestrum until sufficient new bone has osteomyelitis. formed to support the jaw. In the mouth one is tempted to disobey the rule, and it may be followed by dire consequences, as in the ease exhibited to-night. The steneh, which is very disagreeable to the patient and to everybody around him, is the reason why the physician in charge is constantly urged to remove the sequestrum, and one must never give in to this constant urging. The patient will oftentimes say to the physicion, "Please remove this disagreeable, fetid foreign body," but one must never give in to this constant urging until the new bone is sufficiently strong to support the tisues. In reference to the splint that Dr. Beck has exhibited there is one very serious objection to it. The vulcanized rubber is fastened to the jaw bone by wood screws. To me that is a very serious objection.

Some five years ago I had a case in which I was compelled to remove about as much of the lower jaw as is shown removed in one of the specimens which was passed around this evening. The excision was made for an ostcoma and was made through the jaw at the point of the second bicuspid on the left side and the lateral incision on right side. Dr. V. Massman, a dentist, who has repeatedly done such work for us, and upon whom I again called to make the prosthesis for this case, suggested that it would be a good plan to fasten it in place by drilling two holes through the jaw on each side and passing gold rods through it to which the prosthesis could be fastened with gold nuts. Fortunately about a year previous to this I had done some experimental work on dogs and had found that whenever a bone is drilled with any form of drill a cylindrical sequestrum will form about the drill hole unless the drilling has been done under strictly aseptic conditions. Of course, in the mouth the bone can not be drilled under aseptie conditions, and in nine times out of ten this core-like sequestrum will develop and eause trouble. Dr. Massman solved the problem by fastening the prosthesis to some gold bands which he fastened to the teeth on either side of the defect. The patient has worn this apparatus with perfect comfort for over five years. He can remove it to clean it at will. It keeps the sawn ends of the lower jaw in normal relation to each other, he can masticate his food well, and anyone not acquainted with the fact that he had lost a part of his lower jaw would never know it. I should expect the wood screws, if used as shown in the model which was passed around, to get loose or to cause localized periostitis or even osteomyc-

The case was discussed by Drs. Gilmer, Ochsner, and the discussion closed by Dr. Beck.

Dr. E. F. Snydacker described a new plastic operation on the cyclids by means of skin flaps from the neck. The paper was discussed by Dr. Hotz, and in closing by Dr. Snydacker, who said:—

I merely wish to say that my experience with Thiersch grafts has been unfortunate. The Thiersch grafts made at the County Hospital took admirably in this very case and still constriction has gone on to an excessive degree. I am familiar with the method which Dr. Hotz advocates and for small defects of the eyelids Thiersch grafts are admirable, but these grafts shrink so much that the skin will undergo such degeneration that I have found them utterly unreliable for large defects and my experience has been also that of other ophthalmologists. Moreover, I think Dr. Hotz has entirely misinterpreted the object of this operation. I said in my paper both lids were everted and the cornea was hazy, therefore the safety of the eye was involved. The primary object of this operation was to save the eye: this could be most surely accomplished by the use of flaps. An operator who uses proper care in securing good pediele for his flaps and in seeing that no undue tension is put on any portion of the flaps, who also employs proper asepsis in this work is practically certain that his flap operation will be successful, this can never be predicted in a grafting operation, and whether a lid is a little more or less movable is of very secondary importance where the safety of the eye is involved, especially when as you see in the ease here presented it is possible by the safer means to also secure a good cosmetic result.

Dr. Charles J. Drueck read a paper entitled "Rectocolonic Feeding," which was

discussed by Dr. Goldspohn and in closing by the essayist.

Dr. Albert Goldspohn:—Dr. Drueck spoke of the colon and sigmoid being chiefly, engaged in the process of absorption. These parts will, however, absorb only when the quantity of fluid introduced is enough to fill the large ampulla of the rectum first and then to rise up into the sigmoid, even when the "high rectal tube" is used; because, in females at least, this tube coils up in the wide ampulla of the rectum as a rule. This can be found by exploring with a finger in the vagina when the tube is supposed to he in the sigmoid flexure. I have very frequently passed a so-called high rectal tube, as nurses often do under the sanction or direction of physicians, and after inserting my index finger in the vagina, I have demonstrated to my satisfaction that the tube was simply coiled in the ampulla of the rectum. I helieve that this is the rule with these tubes.

Adjourned.

Aux Plaines District Society.

The regular monthly meeting of the Aux Plaines Branch of the Chicago Medical Society was held at the Phoenix Hospital, Maywood, Nov. 24, 1905. A letter from Dr. A. Belcham Keyes concerning "the business bureau" of the Chicago Medical Society was placed on file pending investigation as to the scope of the charter of the Society. A communication from Dr. F. X. Walls for the Council on the work of the Journal of the American Medical Association, elicited a unanimous vote of thanks for the excellent work of its "Council on Pharmacy and Chemistry" with reference to the proprietary remedy evil. A vote of thanks was also tendered Collicr's Weekly for its able and efficient campaign against the "patent medicine evil." On motion the Chair appointed a committee of three on banquet, viz., Drs. Pickard, Rosenbury and Reiterman. On motion, it was decided to invite our wives to the banquet. Dr. W. F. Scott of Melrose Park read a carefully prepared paper on abdominal pain which elicited many words of commendation and a general discussion, opened by Dr. Kerr. Drs. Kettlestrings, Worthington and Kionka reported interesting cases and presented pathologic specimens. Adjourned.

ARTHUR LOEWY, President. C. REITERMAN, Secretary.

Douglas Park District.

PRESENT STATUS OF ELECTRO-THERAPEUTICS.*

J. H. CARPENTER, M.D. CHICAGO, ILL.

Electricity at the present time offers the medical profession a certainty in dealing with many conditions which it is not possible to obtain by any other means. The many and obvious reasons why we should adopt electricity as a valuable therapeutic measure cannot all be enumerated in this short paper. Every one can recall the wild avidity with which the profession has taken up various fads in the past few years, many of which are now almost forgotten. Some of them, like the injection of formalin in septicemia, sprang up, fungus like, in a night, sweeping over the country, and now are heard of no more. Not so with electricity. True, it has had its ups and downs, but it is steadily forging to the front and becoming more and more popular as a therapeutic measure, in spite of the unrelaxing hostility of some parts of the profession, who can see no good in anything outside of drugs or the knife. The appliances for its application have undergone many changes and improvements. One hundred years ago the most crude and primitive apparatus was used in physiological research, and at first was limited to the galvanic current, which was applied to the exposed and isolated nerve and muscle. This was later followed by the faradic current, producing relatively low rates of vibrations in the tissues, practically an electrical massage of the parts. Then followed improvements by more or less rapid strides to the modern high-frequency currents, with their millions of vibrations per second and their remarkable physiological and therapeutic effects. There can be no hard-and-fast lines drawn between the principles or the biologic effects derived from the faradic, static and high-frequency currents; all differences depend upon the strength of the current employed and the rate of its interruptions, varying from the low rate of 6,000 per minute, which will produce severe muscular contractions, to many hundreds of millions per second, at which rate the penetrating power is increased and all disagreeable symptoms disappear. A patient may take millions of volts and as high as two or three amperes with only a slight sensation of heat in the parts. Thus this and other modalities have reached a degree of development which gives it the professional respect it so justly deserves. This is shown largely by the increased manufacture and installment of improved apparatus for the various forms of current which are now to be found in all of the best equipped offices, sanatoria and colleges of to-day.

^{*} Read at the meeting of the Douglas Park Branch of the Chicago Medical Society.

It is also a significant fact that institutions of medical learning have installed chairs of electro-therapeutics, making this branch one of the requirements for graduation. Several of the most prolific writers of this and other countries are giving their time and attention to the literature of this subject, so that to-day journals and textbooks bearing upon it are plentiful in all languages. Investigators on both sides of the Atlantic have spent time, energy and money in their untiring efforts to bring out this subject. The knowledge upon this subject to-day and the results shown in the last few years are gratifying, and in view of this there are few who can afford to ignore this rapidly increasing field of physiologic therapy, or to depend entirely upon drugging or the knife, adhering to old prejudices which have so often been a dead weight to our progress and a just eause for humiliation.

I would not, by any means, be understood as advocating any single method of physiologic therapy as a cure-all. But this is a progressive age, and there are many valuable adjuncts to other rational therapeutic methods and equally entitled to consideration and use. At the present time there are few pathologic conditions for which a favorable method of physiologic therapy can not be found. If I were called upon to decide which method of treatment I believed capable of producing the greatest results unaided, I should be obliged to decide against exclusive use of drugs.

My only desire is to cause you to consider this subject in a broad, liberal manner, giving it at all times the consideration which is legitimately its due, judging it by the results reached by that class of men who have given it proper study and are using it upon purely scientific principles. I am well aware that you are able to eite plenty of people who are willing to condemn any method of physiologic therapy, willing to assert that they have themselves tried it; but can they honestly say that they have derived any better results with any other method to which they have given no more thought? It is very noticeable that electrical apparatus is far more in evidence than a knowledge of its proper application or of the results it should be expected to produce. No wise physician would intrust to his patients the indiscriminate use of strychnia or morphin, yet many are willing to judge electricity by results obtained in this way, while others are content to purchase apparatus, learning how to operate it mechanically, but without any knowledge of its physiologic action, dosage or particular field of application. This manner of application would bring any therapeutic measure into disrepute. To eonvinee the most skeptical of the potency of electricity and the necessity for its eareful application, we have only to point to the deep x-ray burn or the electrolytic power of the galvanie current, eapable of depositing drugs in the tissues, or the sedative effect of the high rate of vibration imparted to the tissues by the higher frequencies. It is not alone in the therapeutic line that advance has been made, but its diagnostic value has been especially marked since the discovery of the x-ray. I call your attention in this way because many of those who are forced to admit the great value of the ray in locating bullets or fractures are not willing to admit its physiologie or therapeutic effect. Is there any other line in which as great progress is being made? If we have made such wonderful progress in the last few years, what may we not expect in the next decade?

South Chicago Branch.

At the meeting of the South Chicago Braneh, held November 13, Dr. W. R. Titzel, 1010S Avenue L, gave a report of eight eases of intussusception in infants under one year operated on within the last year. Favorable action was taken by the society in regard to the establishment of the "business bureau of the Chicago Medical Society," and the councilor, Dr. A. W. McLaughlin, was instructed to support the movement. Favorable action was also taken regarding the joint meeting of South Chicago, South Side, Southwest and Stock Yards branches. A committee, consisting of Drs. W. R. Titzel and Stephen S. Barat, was appointed to make arrangements.

CHICAGO SURGICAL SOCIETY.

A regular meeting was held Nov. 3, 1905, with the president, Dr. D. A. K. Steele, in the chair. Dr. William Hessert reported two cases of perforated gastric ulcer and exhibited the patients. These cases were presented to illustrate two different types of perforation of the stomach. One was an acute perforation in the anterior wall of the stomach, the other a chronic perforation, with perigastritis, in the posterior wall of the stomach, simulating a carcinoma.

In the discussion Dr. L. L. McArthur said that when the pendulum was swinging in favor of gastroenterostomy for every ulcer or symptom of ulcer of the stomach he felt that a word of commendation was due to Dr. Hessert for his courage in withholding gastroenterostomy under the conditions which obtained in the first case. If one followed the booklore, as now obtaining, the tendency was to simply make a puckering-string suture of the perforation and do a gastroenterostomy. To do this in a patient suffering with peritonitis of an extremely acute type entailed an added shock and risk to the patient which, in his opinion, was not always necessary, and particularly not necessary where a perforation appeared definitely in a large, single, indurated, round, perforating ulcer of the stomach. In such cases he believed the practice of Dr. Hessert to close the opening and be content with that for the time being, rather than to complicate matters by the addition of a gastroenterostomy, was the more desirable practice.

Dr. William M. Harsha mentioned a case of duodenal ulcer in a woman of sixty. She was taken with very severe, agonizing pain in the right side in the subhepatic region. She was brought to Chicago and he saw her about six days after the onset of the attack. There was a board-like rigidity of the abdomen, but it was not in the iliac region. It was limited sharply to the right hypochondrium. A diagnosis of perforated gall-bladder was made by her physician. An incision was made over the site of the gall-bladder and nearly a quart of fluid found there, circumscribed, which did not go below the colon or into the iliac fossa, but between the liver and chest wall, and was confined to that area. The anterior surface of the liver was stained by fluids. The patient was profoundly toxic and went on to a fatal termination.

Dr. A. E. Halstead exhibited skiagraphs of a case of hallux valgus before and after operating. He likewise showed the patient and mentioned the method of operating, which differed a little from the ordinary routine plan followed by surgeons in general. The first skiagraph showed the condition of the man's foot before operation and the second showed the excellent result that had been obtained after. It was an extreme case with suppuration of the bursa, with partial destruction of the head of the metatarsal bone.

Dr. Halstead also read a paper entitled "Acute Postoperative Dilatation of the Stomach Following Nephropexy." The patient presented the clinical features and termination of a typical case of acute dilatation of the stomach following fixation of a movable right kidney in an apparently otherwise healthy young woman. The clinical diagnosis was verified at autopsy.

Dr. Alexander Hugh Ferguson said he lost a patient from acute dilatation of the stomach ten years ago. The operation was performed for appendicitis between the attacks. After the anesthetic the patient was in good condition; his pulse was good, temperature normal, etc. He died on the eighth day with enlargement of the abdomen, persistent nausea, persistent vomiting and increased dullness. A postmortem examination revealed the stomach filling the abdominal cavity and protruding into the pclvis to some degree. The area of operation was normal. There was no peritonitis, no adhesion. Obstruction was found at the pylorus, and, although one could pass the ring finger through the pylorus, still it was obstructed by being acutely bent upon itself. The duodenum was not enlarged, but slightly smaller than normal. If the obstruction were between the duodenum and jejunum, then he thought there would have been dilatation of the duodenum.

The next case was one in which he removed the cecum. Vomiting and dilatation of the stomach persisted after the third day. The stomach was washed

out every three or four hours, but the man soon became tired of this and decided to lavage his own stomach, which he did by placing his head down near the floor and a pillow under his stomach. This man is alive and well to-day.

Dr. E. Wyllys Andrews said that he reported some years ago five cases of drowning in feeal vomit in cases of intestinal obstruction and discussed at that time the peculiar mechanism of the accident. He was led to infer that the two orifices of the stomach were dilated when this drowning took place, and the intestinal contents from reversed peristalsis poured through the stomach out into the throat. Only in that way could he account for the enormous quantity ejected in the fatal eases. Since he had heard Dr. Halstead's paper and the discussion he thought these cases might have been instances of acute dilatation of the stomach.

Dr. L. L. McArthur said he had learned his lesson in regard to acute dilatation of the stomach through the death of a very dear friend who had been operated on for hysterectomy. The hysterectomy was made per vaginam. The patient developed no evidence of peritonitis, but had persistent nausea, with vomiting. Cases of acute dilatation of the stomach, he believed, were always associated with rather long intervals of vomiting, then large quantities rather than frequent small quantities of fluid came away. The patient grew steadily worse, yet presenting symptoms which were to him intestinally obstructive in character. At 3 o'clock in the morning on the third day Dr. F. asked the speaker if he would not make an artificial anus to overcome a possible intestinal obstruction which might have taken place from adhesions down around the stump of the uterus. low down in the pelvis. To this he agreed. He made a left inguinal incision, found a distended organ, very much like an enormously distended small intestine, but on endeavoring to raise it he found that it corresponded to the stomach. Pulling it out, he found it had the blood vessels of the stomach, recognized it was the greater curvature of the stomach low down in the left iliac flank. Desisting from further operative interference, a stomach tube was passed and a gallon and a half of dark fluid removed. The incision was closed. They thought they had the ease in hand and that, by passing a stomach tube, on future occasions they would be able to prevent recurring dilatation of the stomach. The patient had one or two more periods of rest, but the stomach refilled, shortly after which she died.

Dr. A. J. Ochsner said that some time ago he directed attention to the fact that some patients upon whom gastroenterostomy or stomach operations of any kind had been performed died as the result of acute gastric dilatation. Several deaths had occurred before they had an opportunity to make an autopsy on one of these patients. Since then they had constantly watched this possibility of acute dilatation of the stomach and had prevented it in several eases by having the patients sit up a few hours after the operation and making gastric lavage in case of any symptoms.

Dr. John L. Yates exhibited a specimen which was removed by Dr. A. J. Ochsner from a woman, aged 75, two days previously. The diagnosis before operation lay between a neoplasm and an appendiceal abscess. Operation revealed both. The mass about the appendix was palpable through the abdominal wall, and at the time of the operation it was found that the sigmoid flexure had become adherent across the abdomen. A loop of ileum was also adherent, so that the removal required the excision of the loop of adherent ileum and the loop of adherent sigmoid flexure, excision of the cecum and distal end of the ileum, invagination of the ascending colon and anastomosing the free distal end of the ileum into the upper portion of the rectum, with an end-to-end anastomosis between the severed ends of the loops of the ileum and of the sigmoid. A satisfactory microscopic examination had not yet been made, but the case was thought to be one of carcinoma of the appendix.

Dr. E. Wyllys Andrews showed a panereatic tumor. A patient came under his care about a year ago with chylous ascites, due to a mechanical obstruction of the lymphatic system of the abdomen. He very early made out that the patient had malignant trouble, presumably of the panereas. Thinking it might be cystic or non-malignant, a laparotomy was made, which resulted in confirming

the diagnosis of inoperable malignant growth of the head of the pancreas. The abdomen was closed, the diagnosis having been easily made by the projection of the pancreatic growth between the stomach and the diaphragm (above the stomach). This patient had chylous fluid removed about seventeen times, and within three or four months afterward died of inanition. The specimen was secured by autopsy. It showed the pathology very well. Dr. Andrews also reported a case of intussusception and exhibited a specimen which consisted of twenty-four inches of gangrenous intestine, which was the lower part of the ileum, and some living intestine attached, which was resected.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

CASE OF HYPERTROPHIC LARYNGEAL TUBERCULOSIS AND EXHIBITION OF MICROSCOPIC PREPARATIONS OF TISSUE

REMOVED FROM THE LARYNX.*

JOHN EDWIN RHODES, M.D.

A. W. K. is 36 years of age, a carpenter, and married. Several years ago he had swelling in one of his knees, followed two years later by the same condition in the other knee. The effusion in these joints was withdrawn several times about five years ago and iodoform injections were used. The disease was diagnosed by Dr. Senn as tubercular. Treatment was continued for about two years, but was then discontinued, and nothing has been done for three years. Both knees are swollen still, and if he is on his feet for long periods or walks excessively he is apt to have pain. No other trouble developed until about a year ago, when he had a dry cough. This was increased somewhat during last winter, but has not been severe and has usually been accompanied with very little expectoration. Lately he has coughed some at night when lying down and complains of irritation in the larynx as causing it. He has complained at times of excessive cough and of raising a great deal, but this is not a constant symptom. Last winter he developed hoarseness, with a burning sensation in the throat which he describes as "like a live coal in the throat." This sensation has practically disappeared. He occasionally has pain in the chest. These are in both sides of the chest, but perhaps more in the upper part of the right. They are rather indefinite and not severe. There was no pain on swallowing at the beginning, nor has there been since. He became almost voiceless in January of this year, and has been speaking in a hoarse whisper since then. Breathing has not been interfered with. He has always had a good appetite and has been able to attend to his present business of a small storekeeper, regularly. He has had no feeling of weakness or malaise to any marked extent. His present weight is 146½ pounds and his normal weight was about 150. For a time during the summer he lost weight, which he has since regained. He attributed this to frequent x-ray treatments, applied to the neck, and which relieved his pain there. During this treatment he lost appetite markedly. He has had no fever, nor night sweats. Temperature has been found . repeatedly 98.6°, occasionally 99°. His pulse rate has usually been from 72 to 80, occasionally 85. In fact, he has had little of the systemic disturbance we find in most cases of laryngeal tuberculosis. Typhoid fever when 25 years old is the only serious illness he ever had, but since that illness he has never been so strong as before. His father is living and well, aged 75. His mother is living, at 68, and suffers from asthma, and he has two brothers and sisters living and well. Two of the father's brothers and a sister died of consumption. His habits have always been good. His drinking is confined to a glass of beer daily, and he smokes about one cigar a day.

I have examined his chest, but have never been able to make out any abnormal physical signs. His sputum has been examined, but no bacilli have been found,

^{*}Read at the meeting of the Chicago Laryngological and Otological Society, Dec. 5, 1905.

although it was once reported that an unsatisfactory slide was thought to show tubercle bacilli. I examined this slide later, but could find none. The sputum is not mucopurulent in character. I have had him under observation since last spring. The conditions changed little in the interval between then and the middle of September, when I made the following notes: The fauces were normal, save elongation of the uvula. The nose was free and there is some deflection of the septum. The epiglottis was then normal; the ventricular bands were much thickened, yellowish-white in color, mottled with red spots over their surface, hiding partly the vocal cords beneath; the arytenoids were slightly thickened, as was the inter-arytenoideus, and on the anterior surface of the latter on the right side a small papillary mass projected, reddish in color. The right vocal cord was pale, thickened, and only its posterior two-thirds could be seen, about one-half its width being covered by the ventricular band. The left cord was also pale, thickened, and its edge was visible under the swollen band. On phonation the posterior third of the cords and bands remained abducted, so that they did not close the glottis. The appearance of the larynx has changed somewhat lately. At present the color of the structures has lost the pale, mottled appearance to a great extent, and is redder. The appearance of the right ventricular band, which has lost its smooth and even contour, is due to the removal of a section with forceps in September. Dr. O. T. Freer very kindly stained and made sections of and examined this tissue, in which were found giant cells, lymphoid cells and numerous tubercular bacilli. Tubercle bacilli were found entangled in the stroma of the tissue and in giant cells. These sections were afterward examined at the laboratory of the University of Chicago, where the findings were confirmed and the tissue pronounced tubercular. Ulceration has not been found at any time. The tissue is an hypertrophy of tissue, and not a disintegration. Some changes in the epiglottis on the left portion of its tip have appeared lately, a thickening without ulceration. From the first examination, with the family and personal histories duly considered, tuberculosis of the larynx was suspected and a tentative diagnosis made. Usually a laryngcal tuberculosis is easily recognized, but the history of months of comparatively little change, the unimpaired nutrition of the patient, the absence of demonstrable lung disease, the non-appearance of ulceration and the local appearance of the structures of the larynx in this case made it not altogether certain until it was confirmed by the removal and examination of the tissue itself. I consider this a rare form of hypertrophic tuberculous laryngitis.

Theisen, in his Candidate's Thesis, before the American Laryngological Association, in 1903, reports a case and reviews the scanty literature fully. He defines one class of cases in which the characteristic changes in the larynx consist of either a marked hypertrophy or hyperplasia of the tissues, or in which tumor-like formations without ulceration occur. In these cases these tissues do not break down, but ulcerations may occur, especially late in the disease. Pachydermia laryngis had to be considered principally in differential diagnosis. In the diffuse form of pachydermia laryngis we have an hypertrophy which might be extensive, but this is epithelial in character, and ulcerations are often present. Of course, there were not characteristic nodes here, as found in the common forms of pachydermia.

I have only a suggestion to make as to treatment. Might we expect benefit from a proper climate? Some cases do well under proper conditions when the nutrition is as excellent as in this patient. I should be glad if he could avail himself of favorable climatic and hygienic treatment. It has seemed to me, however, that the surgical removal of this involved tissue offers the same hope of cure, providing it is radical enough. The operation of laryngeal fissure and thorough dissection of the involved tissues, which could be accomplished in this way, might be advisable. Extirpation of the larynx would be, to my mind, too radical an operation, involving a less desirable subsequent existence and perhaps no more thorough removal of the diseased tissues.

CASE OF VICARIOUS BLEEDING FROM THE EXTERNAL AUDITORY CANAL.*

GEORGE E. SHAMBAUGH, M.D.

In July 1900, Mrs. T. consulted me on account of bleeding from her right ear. She gave her age as 25; had been married seven years; had two ehildren, both living and well. She had never had any previous ear trouble. The bleeding from her ear began five years previous, when, several hours after a Thanksgiving dinner, she experienced a flushing of the head, accompanied by a sinking spell. At this time the right ear began to bleed freely, and continued bleeding for full half an hour, saturating a number of handkerehiefs, and followed by a decided relief in her head symptoms. Dating from this time she had experienced similar attacks of bleeding from the ear, always preceded by the feeling of fullness in the head, and occurring usually a day or two before the time for her regular menstrual flow. The bleeding from the ear did not oeeur every month, but often skipped one and sometimes two months. When the bleeding from the ear did oeeur, she always noticed that the regular flow was correspondingly diminished, and not infrequently the bleeding from the ear would take the place completely of the menstrual flow. The amount of blood discharged from the ear varied from 1/2 dram to ½ ounce, and occurred at intervals lasting over several days. Several times during the five years she had suffered from furuneles in the affected ear. Aside from the bleeding and the furuneles, the only thing she had noticed about the ear was the feeling as though the ear was being filled up. It was the latter sensation as much as the bleeding that led her to consult me.

On examining the ear, the eanal was found to be partially obstructed by a swelling of the upper wall just inside the meatus. This swelling was smooth, eovered with normal skin lining the eanal, and was quite easily compressed, so that, while it was found to fill two-thirds of the opening of the eanal, by a little pressure a speculum could be introduced. At the lower tip of the cone-shaped swelling was a pin-point area where the continuity of the normal skin was broken. No tenderness was experienced on pressure.

During the two years following the first examination the patient was seen a number of times, the bleeding from the ear continuing the same. The patient, in addition, often complained of periods when there was a slight watery discharge from the ear. The swelling in the meatus during the several days in the month, when the bleeding would oceur, increased in size, often completely blocking the canal. On one oceasion the ear was bleeding when the patient consulted me, and at that time I saw several teaspoonfuls of blood escape from the ear. The bleeding point was observed to be the point referred to above, at the tip of the nipplelike swelling. On this oceasion I touched the bleeding point with crystals of ehromie aeid. The bleeding stopped, and since that time there have been but a few occasions when a slight bleeding from the ear has taken place. At one time, two years ago, there appeared a diffuse superficial ulceration of the eanal just external to the swelling. This ulceration extended rapidly until it involved the eoncha of the ear, as well as the lobule. At this time Dr. Frank Montgomery examined the uleeration and pronounced it as probably luctic. The condition healed rapidly under the administration of K. I.

I had not seen the patient for the past two years until several days ago, when she consulted me because she had for the past month been experiencing considerable pain, radiating from that ear over the side of the head. She says she has had no bleeding from the ear during this period, and the only annoyance has been the occasional watery discharge. On examination of the ear, the condition is found to be practically the same as when seen in previous years, with the exception that, in addition to the nipple-like swelling of the upper wall of the canal, there is a small flat swelling crowded between this and the posterior wall of the eanal. This latter is also covered with normal skin, but is slightly more reddish than the larger swelling. From the soft spongy character of the swelling,

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its broad flat base, together with the tendency to swell up temporarily at the time of the menstrual period, I have been inclined to believe that the condition was one of angioma.

Vicarious bleeding from the external canal, though rare, is not an unknown occurrence. A few of such cases appear in the literature. Usually the bleeding points are the opening of the glands found in the upper posterior wall of the canal. Gradingo points out that a distinction should be made between bleeding from the eanal, which occurs in the presence of a trauma, or a growth in the ear, and bleeding that occurs when the canal appears to be quite normal. It is this latter that Gradingo would consider as alone the true vicarious bleeding. In the case that I report here the fact that the swelling in the canal appears to be covered with normal skin and the appearance of the bleeding at the time of the menstrual flow, which it in part or completely supplants, leads me to consider this a case of true vicarious bleeding from the external canal.

A regular meeting was held Nov. 7, 1905, with Dr. William L. Ballenger in the Chair. Dr. Edwin Pynchon showed a new style of tonsil forceps, which he had found to be particularly useful and valuable. He also showed a blunt separator which he had devised. It occurred to him that in the instrument used by Hajek there were two defects. One was that the instrument proper was so short that in separating the perichondrium or the periosteum far back, it was necessary to introduce the handle into the wound. He considered this a serious defect, consequently ne had devised a blunt separator in which this feature was corrected by lengthening the blade. Furthermore, while one edge of his instrument was copied after the Hajek pattern, the rear end of the other edge was made to project so as to be used in separating from behind forward. He had found this instrument to work nicely. These two instruments are made by F. A. Hardy & Co. of Chicago.

Dr. Henry Gradle read a paper on nasal reflexes, in which he quoted instances observed by himself and others, and criticized the extravagant claims made for this topic in previous years. He emphasized, however, the fact that there are instances which can be well-established as nervous disturbances starting from irritative disease of the nose, and can be cured by removal of the latter.

DISCUSSION.

Dr. J. Gordon Wilson: - After the splendid review which Dr. Gradle has given of the whole subject, there is very little that I can say with regard to the clinical side. I wish to confine my remarks principally to the anatomic and physiologic aspects of the subject. I use the term reflex in a physiologic sense, in the sense that we have at one end an exciting organ, connected with a central part, which again is united with an executing organ. I object to the indefinite way in which the word reflex is so often used, attempting to classify under it various hadly understood connections, which supposedly may exist hetween various diverse parts of the body, especially if pathologic changes be present in both. It is a great pity if we, in regard to this term, sever ourselves from the physiologists, because clinical medicine is becoming more scientific, and we must define our terms much more strictly than we have been doing in the past. Our knowledge of the nervous system has advanced much within the last two or three years. It has not altered substantially, but it has altered in many details when we consider the question of nasal reflexes. For instance, take up a modern text-book and look at the origin of the nerves to the nose; we are told that the nerves to the respiratory part of the nose come principally from Meckel's ganglion. As a matter of fact, no distinct nerve originates in Meckel's ganglion. The fibers which rise in the ganglion join the nerves which pass through it from the Vidian or over it from the Spheno-palatine branch of the fifth cranial nerve. We read that the Vidian nerve is formed by the Great Superficial petrosal, from the Geniculate ganglion, and by the Deep Petrosal, from the sympathetic plexus on the Internal Carotid Artery. Such a description makes no mention of the branch to the

Vidian from the Nervus Tympanicus of the ninth Cranial Nerve, an important connection, insofar that it shows the close relationship which exists between the nerves of the nasal mucous membrane and the Glossopharyngeal and through the Glossopharyngeal with the Vagus and the lower part of the respiratory tract.

The principal sensory nerves of the nose come from the Maxillary branch of the fifth Cranial Nerve. They pass out in the spheno-palatine nerve. A few fibers from these nerves end in Meckel's ganglion; a number directly arising in the ganglion join the branches and are distributed to blood vessels and glands of the nose and soft palate. The nerves from Meckel's ganglion appear to be principally connected with the vasomotor system and with the secretory system. Some of its connections undoubtedly extend beyond the nose. For example, there is one branch that goes from the ganglion to the fifth nerve, then either through the N. Zygomaticus or through the N. Ophthalmicus to the lachrymal gland.

There is here a clearly defined route by which irritation of the mucous membrane of the nose may bring on lachrymal secretion.

Discussing the physiologic aspect of the question I shall limit my remarks to the question of how reflexes may affect the respiratory tract. It is quite true that we are little conscious of the activity of nasal reflexes, but I believe they are ever at work, and that our cognizance of their activity comes most frequently when, from some pathologic condition, they are more stimulated than usual, and the attention of the higher neurons is brought to the work done by the lower neurons. It may be on account of this that so little attention has been paid to nasal reflexes. Another point is, reflexes of the nose, like all other reflexes, are to a large extent independent of the will. At the same time, we can to a certain extent influence a nasal reflex and excite its efferent fibers. Thus, if we have a slight irritation of the nose, discomforting, but not sufficient to produce the desired sneeze, we can by looking at a bright light produce that sneeze. Here an additional stimulus has purposely been added to the nasal stimulus to produce the reflex phenomena. So it would appear that additional stimulus to a sensory impulse may cause the efferent mechanism to come into play. What is the physiologic significance of nasal reflexes? We have sufficient experimental data to give us information on this point. If the nasal mucous membrane of a dog or eat be stimulated, we find there is closure of the glottis, slowing of the heart's action, slowing of respiration and dilatation of the vessels of the nose. If sufficiently strong, there may be produced sneezing and coughing. What does this mean? Surely, it indicates that there is here a mechanism for the protection of the respiratory passages from the irritants.

Last year I presented a paper before this society in which I pointed out that we are apt to forget one of the functions of the larynx, namely, the protection of the respiratory passages. Correspondingly, in the nose the nasal reflexes physiologically act to protect the respiratory passages. Nasal reflex can be produced by a variety of irritants, electrical, mechanical and chemical; but of the three the chemical is the most powerful. As Brodie demonstrated, bromine gas held before the nose of a dog will produce closure of the glottis. Coming to the interesting question of the influence of nasal disease on the production of asthma, there can be no doubt that removal of disease from various parts of the nose has produced benefit, and has, temporarily at least, stopped the paroxysms. But this does not prove that the nasal disease is the primary cause of asthma. It may be but the secondary or additional stimulus previously referred to. If you remove the secondary cause, and give the patient a better chance of being benefited you have accomplished a good deal. It has often been argued that there are some areas in the respiratory mucous membrane more irritable than others. There is no evidence from the nerve supply, or the nerve endings in any particular area, to support this view. There is one area in the septum which differs from the rest of the septum, namely, the so-called nasal tubercle. The pasal tubercle is high up on the septum, a little toward the middle posterior part. It is a ridge of thickened mucous membrane, with numerous glands, and lies in close proximity to the middle turbinate, on which it marks off the ophthalmic

part from the purely respiratory part. It has been demonstrated in animals that there is a particular area on the septum which, above all others, will produce reflex contraction of the bronchial muscles. It may be that these two areas coincide, but so far this has not been shown. In summing up, the important thing from a clinical point of view, is to stop abnormal reflexes. In animals the most effectual way is to use atropin. Chloroform and ether have the same effect.

Dr. Norval H. Pierce:-From my own clinical experience I believe that there are very few nasal reflex neuroses; can only recall two instances where asthma was really aided by operation—in one case the removal of polypi, and rather small ones, and in the other case correcting a deflection of the 'nasal septum high up. Both of these eases occurred more than five years ago, and since that time I have not met with a ease where the asthmas that I have encountered that have been referred to me for examination have been in any way due to intracranial disease, so far as I can ascertain. Nothing has been said about the sexual area of the nose. There was one case referred to me about a year ago, the patient being a doctor's wife, who had dysmenorrhea, was a highly neurotic, hysterical woman. I tried an experiment, after having been assured that it was the last hope of curing her dysmenorrhea. I assured her that I found indubitable cvidence of nasal disease, and that, in all probability, this was the cause of her dysmenorrhea. She swallowed both the hook and bait and was only too glad when I cauterized the posterior portion of her septum on both sides. It was somewhat swollen, somewhat hypercmie, but not materially so. There was no absolute pressure. But I cauterized it, and the next menstrual period was infinitely less painful than any she had had for a long time. This continued for about three months, when she passed from under my benign influence and the dysmenorrhea returned. Now, I do not believe that the cauterization of the nasal septum had anything to do with the disappearance of the dysmenorrhea, and I believe that the majority of these cases, not even excepting asthma, that have been eured by intranasal operations-presumably cured-have been eases of hysteria, neuroses, that were influenced by suggestion. I have never seen, with the exception of the two cases I have mentioned of asthma, a well-defined case of pronounced reflex neurosis that has been cured by any intranasal operation. We have all seen facial neuralgias and neuralgias that have been out of the physiological domain, neuralgias of irradiation eured by drainage of the antrum or by the destruction of ethmoidal tissues or drainage of a sphenoid antrum. But these are, as Dr. Gradle has said, hardly reflex neuroses.

Dr. Edwin Pynchon:—There is one point that I did not observe the essayist to touch upon as a cause of asthma, namely, that condition known as posterior hypertrophy of the turbinals. I have seen pronounced cases of asthma which were promptly and permanently relieved by the removal of the posterior hypertrophy of a turbinal by the use of the hot snare. All of us in our experience in the treatment of hay fever have observed oceasionally that eases are markedly benefited, or may be cured, by the removal at one time of a ridge from the septum, as mentioned by one of the speakers, and at another time by the removal of polypi or the removal of an enlarged turbinal. There is a general principle involved in the results which are obtained by different procedures in different eases, and it all hinges upon the fact that in hay fever there is always impaired ventilation and defective drainage of the attie of the nose. I never yet have seen a case of hay fever where, during the paroxysms, there was not an enlarged and boggy condition of the middle turbinal and an occlusion high up of that part of the nose. In my opinion, and so far as my observation goes, these cases of hay fever can in the interval between attacks be so treated surgically as to destroy sufficient tissue so that even during the process of swelling the opposing surfaces ean not touch, and by so doing we ean very materially diminish the tendency to hay fever, even if we do not cure it. Of course, it is known that in hay fever there is a combination of causes which has been described as a tripod, one feature being a defective nose, another being certain conditions which have been described as the uric acid diathesis, and still another, exposure to the exciting cause. If the nose can be put in such a physiologic condition that air will at all times penetrate all parts of the nasal fossæ, the sinuses will then be ventilated and there will follow a marked diminution in the tendency to recurrences of attacks of hay fever.

As regards asthma, we have a different proposition, though it hinges upon the same pathologic condition. Whenever the attic of the nose is occluded so as to prevent ventilation of the sinuses and the evaporation of the nasal secretion in the high part of the nose, there is a constant trickling of secretion down the fauces to the trachea and bronchi, and the settling of this mucous secretion from the nose is the chief cause of asthma; consequently, in the same way, if the nose is so treated that those secretions which are pathologic will be diminished, and so that the normal secretion of the nose can be evaporated, we will do away with the tendency to asthma. You will understand I take this ground: when there are hypertrophic conditions in the high part of the nose, by prevention of the evaporation of the nasal secretion there is a certain amount of thickening and decomposition, so the secretion becomes irritating. There is also another feature to be remembered, and that is, when the mucous membrane or tissues in the nose become chronically hypertrophic they cease to throw out sero-mucous secretions of the same character as is normal; consequently, being of a different character, it is not so easily evaporated, and is, in fact, from the start a thickened and diseased secretion from a diseased and abnormal mucous membrane.

Dr. George E. Shambaugh:—No rhinologist to-day can look through the literature which appeared in the '80s and '90s on the subject of nasal reflexes without being astonished at the extent to which many of the rhinologists at that time allowed themselves to go in attributing to nasal reflexes all sorts of neuroses. The literature of this period teaches the important lesson that the subject of nasal reflex is one which we must study with caution. If we stop and analyze the methods by which the diagnosis of a nasal reflex is established we can readily appreciate how errors in diagnosis may occur. In the first place the method of making a diagnosis of nasal reflex by the use of a nasal probe is apt to lead to an error in diagnosis. The theory of this method is that if so-called sensitive areas in the nasal mucous membrane are touched with a probe the reflex trouble will be started. As a matter of fact persons suffering from a supposed nasal reflex are usually of a highly neurotic type, and it is very easy to understand how the irritation of a membrane as sensitive as the mucous membrane of the nose would act to produce an attack of the particular nervous trouble from which the patient might be suffering without the nasal membrane being at all responsible for the cause of the trouble.

Again, the method of diagnosing a nasal reflex by the use of cocain is open to error. This method is based on the theory that if a person is suffering from a nasal reflex the cocainization of the particular sensitive area in the nose will stop temporarily the reflex trouble. The temporary cessation of a nervous trouble following the application of cocain to the nasal membrane can not be considered conclusive evidence that this trouble was of nasal origin, since water applied in the same way has been known to produce the same result. Such cases are particularly susceptible to suggestion of this sort. Another method of making a diagnosis of nasal reflex is by operating on the supposed cause of the trouble in the nose. The relief of the trouble is held to be conclusive evidence that the nose was the cause. Such reasoning is here again seriously at fault, and has often led to unnecessary operations. The examination of any nose will disclose anatomical variations, such as slight spurs of the septum, which the enthusiast is likely to interpret as the source of the reflex trouble and remove by operation. same error is frequently made of attributing to these harmless anatomical variations in the nose the cause of nasal pharyngeal catarrh, and even any or all the manifestations of chronic middle catarrh. The patient is subjected to an intranasal operation, the only effect of which on the ear trouble must be to increase rather than alleviate the condition.

There is, perhaps, no more pernicious error than that of interpreting the effect of a temporary relief of a nervous symptom following an operation as evidence

that these nervons symptoms were produced by the part operated upon. The gynecologists, I believe, hold the reputation for this sort of reasoning, and every one is familiar with the harm done by the enthusiastic gynecologist in his operation on the ovary for the relief of nervous conditions. A specialty, and rhinology is no exception, is a dangerous field for the work of an enthusiast or one prone to have his hobby. In the matter of nasal reflexes the rhinologist must take care lest by faulty reasoning he may be led to false conclusions.

Dr. G. P. Head:—Dr. Wilson in his remarks referred to the cases reported by Francis. I noticed in a paper read before the British Medical Association last year by Macdonald that he reported a large number of cases of asthma cured in the same way and predicted that that would be the way in the future in which the general practitioner would cure cases of asthma, i.e., the cauterization of that point on the septum which is opposite the anterior extremity of the middle turbinal. The suggestion was made that disturbance of this area is not necessarily the cause of asthma or of other reflex neuroses, but that it is a particularly impressionable area in the system and one which is easily reached. There may be other areas which we can not get at so easily, but which, if operated upon, might relieve the symptoms of the reflex neurosis just as effectively as cauterization of the septum. But this is a convenient place to reach and many cases can be relieved by touching it. The whole system is so balanced in some individuals that a considerable error in one organ or very slight errors in several will throw it out of balance and cause trouble which we ordinarily speak of as a neurosis. If we correct any one of the things causing this, we enable the system to resume its balance and prevent those explosions which occur in the form of neuroses. It is the last straw that breaks the camel's back, and a very slight nasal abnormality may be the last straw when the system is carrying all it can in defects of other organs.

We certainly know that in the nose we have areas which are very sensitive. and we know that a person who is not breathing satisfactorily through the nose has one factor at work in destroying nerve balance. If we can correct this condition we do a good deal toward correcting the neuroses that have been mentioned, and that is the idea with which I think most of us work in the nose. We commonly say to a patient with a bad condition of the nose: "I do not know that this will cure your assease at all. I know one thing, it will improve your general condition. It puts one organ in a normal condition, and if the operation tends to that result it will help you in that way. It will do you good in a general way." I noticed a recent article, not alluded to by Dr. Gradle, in one of the St. Paul journals, in which the writer reports a number of cases of tinnitus aurium relieved by cauterization of the middle turbinal, a point which most of us in recent years have been chary in touching with cautery. In view of the connection between the various parts of the body, we can readily see how such a cauterization might influence a disturbance in the ear. The point I have gathered from the discussions on nasal reflexes is that we have in the nose an area on which it is easier to make an impression than on other areas of the body.

Dr. T. Melville Hardie:—I shall not attempt to discuss Dr. Gradle's excellent paper, except to refer to a point raised by Dr. Pierce, who is the only member of the society who has given his experience with reference to asthma and its cure by the removal of pathologic conditions in the nose. I merely wish to say that my experience is altogether different from his, and I remember at this time half a dozen cases of children to whom the suggestion or cure of asthma by operation could not be made, but in whom the asthma has altogether disappeared after the removal of adenoid vegetations. I remember distinctly three children in one family, all of whom had asthma practically from the time of their birth until the removal of adenoid vegetation, and after this the asthmatic symptoms did not recur.

Dr. John Edwin Rhodes:—As laryngologists and rhinologists we ought to be exceedingly conservative in the use of the term nasal reflexes. This is largely a speculative field. When we come to critically study all of the cases that are reported we can arrive at no other conclusion. Although the subject has been

brought up by members of our profession many times, and it has been thoroughly studied, a critical discussion is always profitable. As Dr. Gradle has said, although a great deal has been written on the subject the speculative character of the subject is still evident, and this is evidenced very plainly in considering the conditions in asthma. A good many of us have treated asthmatic cases by intranasal operations, the removal of polypi or cauterizations of particular areas, with fairly satisfactory results, but in other similar cases we have not been so fortunate. We have been unable to relieve the distress at all. We should consider the physiologic points that Dr. Wilson brought out, and chief among them the question as to what constitutes a "nasal reflex."

In a discussion of this kind we are apt to stray far from the precise conditions. Nasal reflex means that we have an afferent sensory nerve, a central area

in the cerebro-spinal center, probably, and an efferent motor nerve.

Hay fever ean not be classed among those evils resulting from nasal reflex alone. In hay fever we have other elements to contend with quite as important as the reflex, if not much more so. We have stimulus to the nerve endings in the nasal eavity, pollen in the atmosphere, a neurotic condition in the patient, the psychic condition under which the patient lives and works. There are, no doubt, some abnormal conditions that are of distinctly nasal reflex origin. There are nasal reflexes from irritation of the nasal mueous membrane, whether from growths or by the use of a probe or otherwise. We have eoughing and sneezing and spasms of the glottis, and asthmatic seizures from nasal reflexes, but that most of these are purely physiologic eonditions has been shown by Dr. Wilson, and we can not but agree with him. Taking all this into consideration, it is a pretty well established faet that asthma is sometimes a nasal reflex, but that it can be relieved by any fixed nasal operation would seem to be doubtful, considering the fact that Francis reported 402 cases of asthma which he treated by eauterization of the upper anterior portion of the nasal septum, claiming to have relieved or cured all but eight of these, while another authority, equally good, declares that ne has cured asthma by eauterizing the anterior end of the inferior turbinated body, and other eases have been cured by the removal of polypi, exostosis or other obstructions. There would seem to be no distinctive area, so far as we can discover from comparing the cases reported, which can be definitely pointed out as the focusing spot to be treated for the cure of asthma.

It has been said that with a nasal reflex as a starting point, almost anything can be reasoned out. The same may be said of other reflexes. I need but to mention those claimed by some gyneeologists and ophthalmologists. That we are apt to stray very far from proven facts in discussions of this topic is because the positive proofs are so few. We must agree with Dr. Shambaugh as to the amount of speculation that hampers us. The methods we employ are tentative, and they do not really prove much after all. Many of us have had eases similar to those reported by Dr. Pieree. Such a one was referred to me not long ago. The patient, a young woman, had suffered from dysmenorrhea for several years. During one of her menstrual periods the attending physician went to the house and applied coeain to the anterior portion of the nasal septum. This relieved the dysmenorrhea promptly. He subsequently sent the ease to me for eauterization of these nasal areas, which I did, but do not know how permanent the results may be. She was much better for a time, but I doubt very much if we can expect a permanent cure from such a procedure in many cases of the kind. The nervous condition of the patient must be considered as an important factor in these eases. I have in mind a reported ease of epilepsy that was eured by the removal of a spur from the septum; and that it was the eause of the epileptie attacks seems to have been proven by the fact that a plug having been put in the nosc to prevent hemorrhage, the swelling of the plug brought on epileptie attacks, from which the patient was a sufferer. Following the removal of the plug there was a eessation of the attacks, and at last reports the removal of the spur had brought about a relief from the epilepsy, as the attacks had not returned. Such eases, in my opinion, however, are purely speculative and do not increase our knowledge of facts very much. The scientific aspect given to these

discussions by Dr. Wilson and Dr. Gradle should certainly be of great service to us, and especially the point emphasized that we can often remove one of the causes of the explosion in asthma by performing intranasal operations.

Dr. George Paull Marquis: - I simply want to emphasize the point that we should not attempt to ascribe everything directly to nasal reflexes, but we should differentiate between nasal reflex proper and mechanical irritation. There are a great many such cases as have been cited this evening. For instance, we know that patients with asthma have been benefited very materially after the removal of adenoids, the removal of hypertrophies of the posterior ends of the inferior turbinate, or after the removal of polypi. But in those eases we always have a mechanical irritation due to the secretion of these hypertrophicd posterior ends, these polypi, or from the adenoids, which we all know sccrete very profusely, and the mechanical irritation of this secretion in the pharynx over the epiglottis sometimes irritates the larynx itself, bringing on spasms or attacks which, if not eaused directly by it, increase or excite a predisposition to such diseases as asthma. Other instances are those of mechanical pressure in the nose due to deviations of the septum, to spurs or hypertrophies. I have seen a number of cases of constant headache where the patients have been relieved simply by straightening a deflected septum where it pressed, on the middle turbinated bone. This was not a nasal reflex, but direct pressure. On the other hand we see cases where a reflex condition, pure and simple, occurs. I remember the case of a child I operated upon last winter. The child had frequent convulsions. made a diagnosis of adenoids in the vault of the pharynx, and after their removal the convulsions did not recur. I do not see how those eases can be explained on the ground of pressure. There are many eases which we ascribe to reflexes, but which I think can be explained on the ground of direct mechanical pressure. We should not ascribe everything to a nasal reflex when in many eases the cause may be traced directly to other sources.

Dr. J. Holinger:-With regard to Dr. Gradle's remarks concerning affections of the heart in connection with the nose, I wish to say that I recently read a paper before the Mississippi Valley Medical Association on "General Blood Poisoning Emanating from the Nose." I reported cases where general rheumatism was cured by operative procedures in the nose, particularly the frontal sinus. To me it appears quite plausible that certain heart lesions are metastases from the nose, as was proven long ago of septic processes in the tonsils. May not heart lesions have a similar explanation as a form of general blood poisoning from the nose? The most pronounced case in this line was an old man who was not neurotic, but who had rheumatism in all parts of the body for years and years. He consulted me and I removed polypi from the anterior part of the nose, after which he stated distinctly that he was free from rheumatism. The rheumatism, however, returned after a few months and disappeared again after I had removed another series of polypi. Finally his rheumatism was permanently cured after the frontal sinus was opened and pieces of necrotic bone were removed. There can be no question as to eause and effect in this ease. It was simply a general blood poisoning from the affection of the frontal sinus, and the rheumatism was nothing more than a slight sepsis. So I think a line must be drawn between real reflex from the nose and general septic conditions with metastases in different organs, with exclusion of the nerves. I doubt, however, whether a differential diagnosis is always possible. This, to me, explains anyway a part of the speculations about nasal reflexes.

Dr. A. H. Andrews:—It is evident, after listening to this discussion, that it is exceedingly difficult always to trace the relation between cause and effect. I think there is little doubt but that some of the effects which we see are due, as Dr. Head suggests, to the disturbance of nervous equilibrium caused by intranasal conditions. The question of dysmenorrhea has been discussed. I had some experience in the treatment of perhaps half a dozen cases of that kind which were referred to me by a gynecologist. Three or four of them I have been able to watch. In three the dysmenorrhea has returned, although it was said to have

been greatly relieved shortly after cauterization of the nose. In one patient, whose nose was cauterized over two years ago, the dysmenorrhea has not returned, but that of itself does not prove anything, because dysmenorrhea disappears apparently of itself sometimes. With regard to the psychic effect of the application of cocain to the nose, I would say that in three of these cases we applied a pledget of eotton, saturated with water first, to see what effect it would have, and got absolutely no effect upon the pain. The experiment was made while the patient claimed to be suffering severe pain, and within an hour afterward applications of cocain were made and the pain was relieved. My recollection is, relief was afforded in ten or fifteen minutes. Again, we must remember that we are not alone in wrestling with these reflex cases. Gynecologists, as has been said, have removed ovaries for certain disturbances of the nervous system. We know very well that the orificial surgeon—I am tempted to call him the rectologist stretches the rectum, removes pockets from the rectum, and, from his reports, he gets better results than we dare report to-night. The specialist-I do not know what to call him, as I do not know what class he belongs to—circumcises people for hay fever and for asthma, as well as for various other disturbances which have sometimes been attributed to nasal conditions, and obtains results which are said to be quite satisfactory. So we must remember that we are not the only ones, and we must leave something for the other man to do in the treatment of these cases.

Dr. Joseph C. Beck:—I would like to report a case in connection with this discussion which Dr. Gradle has had the privilege of seeing. It is a case of angioneurotic edema, the patient having periodical swelling of the cheek in the region close to the parotid gland, and associated with it is a rhinorrhea. Examination of the nose between attacks showed it to be absolutely normal. The swelling is preceded by a sneezing fit, and then there is edema or closure of both nostrils, but more particularly on the side where the swelling occurs on the face. This swelling lasts for twenty-four hours, after which the nasal passages become clear and the swelling goes down. Dr. Gradle has seen the case and concurs in the diagnosis of angioneurotic edema, and the nose very likely has nothing to do with the swelling. I tried to find sensitive spots on the septum. I cauterized the septum at various times without any effect whatsoever, and I believe that the nose plays very little part in the pathologic condition, particularly as regards heart lesions and rheumatic affections.

FIBROMA OF THE TONSIL.

Dr. Edwin Pynchon.

I have taken the privilege of bringing here to-night a patient whose case is of sufficient interest to warrant me in presenting him. It is a case in which there was a condition of marked hypertrophy of one tonsil only. He is 31 years of age and in good health. He came to me with the following history: His health up to eight years ago was perfect, with the exception of having had the usual ills of childhood. Otherwise he remained in good health until he was 23 years old, at which time he had an attack of tonsillitis or quinsy, which was so violent that it confined him to the house for approximately five weeks. After the subsidence of the quinsy there was no decrease in the size of the tonsil. At the time I examined him the picture was very peculiar. Beginning in the median line, from the uvula, the tonsil on the enlarged side went down with a simple curve, while on the other side the faucial curve was normal, the two pillars being free, with a recess between them, containing a small tonsil which might be called normal. At the time of the attack of quinsy only one side was affected. The first question that would occur would be that of malignancy. There is no history of any in the family. The tonsil had remained in the present condition for eight years. During the interval the patient's health was perfect, with the exception of two or three slight attacks of follicular tonsillitis. Within these eight years he has served three years in the army, during which time he did not lose a single day on account of impaired health. He has also served in the militia. During this time (eight years) he was examined by different army surgeons, five of whom indorsed the propriety of removing the tonsil, but all of whom declined to do so, apparently on account of the fear of hemorrhage. At the time I examined him the anterior pillar was tremendously enlarged and the tonsil on that side had the appearance of being almost the size of a pullet's egg. In the center of the tonsil there was an aggregation of four or five large follicles, which looked like a chronic lacunar tonsillitis.

I decided to remove the tonsil by "cautery dissection," believing it to be the safest method in any case where there is a fibrous condition or danger of hemorrhage. I cleared out the supra-tonsillar fossa perfectly and peeled the tonsil down toward its base. The mass was so large that it fell over on the other side. so as to gag the patient considerably. There was not much hemorrhage, but a large amount of frothy saliva. The operation occupied considerable time. Eventually I had the tonsil pretty well loosened, though, on account of having to work in the dark, as I got near the median line I scaled out toward the surface rather than go into deep water. I was able to separate the upper threefourths of the tonsil. I eventually completed the operation with a cold snare. From the pedicle which I cut with the cold snare there was a moderate hemorrhage, which lasted ten or fifteen minutes, but which was easily arrested by gargling with ice water. The only thing I left was the lower part of the tonsil. I usually get all of a tonsil when I go after it, but in this case I did not get it all. I contemplate removing the remainder at a later period. As regards the character of the tonsil, I do not believe there is anything of a malignant nature about it. I consider it of a fibromatous nature only. The tonsil weighs a trifle over half an ounce. During the past sixteen years I have done, probably, in the neighborhood of 2,000 tonsillectomies, in addition to many tonsillotomies. I have removed several tonsils that looked large. I previously removed a tonsil which I thought would weigh half an ounce, but it weighed less than two drams. have never seen as large a tonsil as this one.

Dr. Joseph C. Beck made some remarks on "Tympanic Massage: A New Method by Means of Metallic Mercury."

CRAWFORD COUNTY.

The Society met in regular session at the office of Dr. I. L. Firebaugh, in Robinson, Jan. 11, 1906, at 2 p.m. Those present were Drs. T. N. Rafferty, I. L. Firebaugh, C. Barlow, A. G. Meserve, Frank Dunham, H. N. Rafferty, Gould Smith and C. R. Burner of Robinson; Drs. C. H. Voorheis and J. B. Cato of Hutsonville; Dr. J. E. Midgett of Flat Rock and Dr. C. E. Hardin of Trimble. The minutes of the previous meeting were approved. The Board of Censors having reported favorably on Dr. Gould Smith's application for membership, he was duly elected on vote of the society. Dr. Charles E. Hardin of Trimble was presented as a candidate for membership, and on motion, the rules were suspended and Dr. Hardin was at once elected to membership in the society.

The following program was rendered: 1. "Ear Complications of Scarlatina, etc.: Their Prophylaxis and Treatment." Dr. J. E. Midgett. 2. "Eyestrain in General Practice," Dr. H. N. Rafferty. 3. "Pneumonia," Dr. Gould Smith. These papers each brought out a very general discussion.

The Treasurer was instructed to pay the Argus Printing House the sum of \$11.50, balance on printing bill to date. The following resolution was adopted: "Resolved. That the Crawford County Medical Society endorses the campaign against the nostrum evil, which has been inaugurated by the Council on Pharmacy and Chemistry of the American Medical Association, and trusts that this good work may be continued."

The Secretary read a letter from Dr. R. J. Christie, Jr., of Quincy, chairman of Section 2. Illinois State Medical Society, asking for a better representation from Crawford County on the program for the Springfield meeting. On motion, the society adjourned to meet in March, at the office of Dr. C. Barlow of Robinson.

H. N. RAFFERTY, Official Reporter.

MACON COUNTY.

DECATUR MEDICAL SOCIETY.

Tuesday evening, Jan. 23, 1906, the regular monthly meeting of the Decatur Medical Society was held in the rooms of the Decatur Club, the President, Everett J. Brown, presiding. The program for the evening consisted of a talk by Dr. J. T. McDavis on some interesting cases of Obstetrics. The Doctor described some of the cases he had when beginning the practice of medicine. His reminiscences were greatly enjoyed by the members of the Society. Dr. L. C. Taylor, the guest of the Society from Springfield, reported a case of chylothorax with chylous ascites, and exhibited specimens from the case. Dr. Taylor's paper was greatly appreciated both on account of the rarity of the condition and because of the thoroughness with which the subject was discussed. The Society extended a vote of thanks to Dr. Taylor.

The President appointed as a committee to draw up resolutions endorsing the magazines that are fighting the nostrum evil, Drs. M. P. Parrish, F. M. Anderson and A. F. Wilhemy. Following the smoker, the Society adjourned.

MORGAN COUNTY.

CARDIAC ANEURISM, WITH REPORT OF TWO CASES OF RUPTURE OF THE HEART, WITH SPECIMENS.*

Dr. Herbert A. Potts, JACKSONVILLE.

ASSISTANT PHYSICIAN ILLINOIS CENTRAL HOSPITAL FOR INSANE.

Before proceeding with the subject I should like to call your attention to some conditions which may seem to be a little foreign to the topic, but which are closely related from an etiologic standpoint. What is generally known as an aneurism is a hollow tumor filled with blood, whose cavity communicates with the lumen of an artery, permitting the blood to flow in and out. Its walls may or may not be composed of the coats of the artery; therefore we have what is known as true aneurism and false aneurism. The sac of a true aneurism is composed of the walls of the artery, one of which must be intact, while the other, a false aneurism, has no arterial coat and the blood is contained in a sac which is composed of other tissue. True aneurisms are classified by the shape of the sac, being fusiform, cylindrical, cirsoid, etc. A dissecting aneurism is one in which the blood enters between the arterial tunic and occupies the space so made. These are usually seen in the aorta and are usually due to injury or laceration.

Aneurisms may be classified as to their etiology: 1. Loss of resistant power and consequent distention. This may be in early arteriosclerosis, before compensatory thickening occurs, as is often seen in the aorta. These arteriosclerotic aneurisms also occur in the smaller arteries and are common in diseases of the brain, where they are called miliary aneurisms. 2. Embolic aneurisms. These are swellings of the artery on the proximal side of an embolus. These are most often seen in end arteries. 3. Mycotic type, seen in malignant myocarditis. These produce small abscesses, which may rupture into the cavity of the heart, producing acute cardiac ulcers; they may also rupture into the pericardial cavity, or become encysted. 4. Parasitic aneurisms; these are often seen in the mesentery of the horse and are due to the strongylus armatus. 5. Thoma's traction aneurisms of the concavity of the aorta at the site of the remains of the ductus botalli. 6. Idiopathic aneurisms, due to no known cause, which have a tendency to develop in various parts of the body of the same individual.

Cardiac Aneurisms.—There are aneurisms of the coronary arteries, but by cardiac aneurism we mean one in which the structure involved is either the wall of the heart or one of its valves. Valvular aneurisms result from ulcerative en-

^{*} Read before the Morgan County Medical Society Nov. 9, 1905.

docarditis. These may perforate the valve or so weaken it by erosion that the valve gradually dilates under the pressure exerted by the blood. This condition is usually confined to one segment of the valve. Aneurisms of the walls of the heart result from weakening of the cardiac muscle, being a sequel of chronic myocarditis, stab wounds or gumma. The location is usually at the apex of the left ventricle, which is usually the seat of fibrous degeneration. Cardiac aneurisms, following, as they usually do, arteriosclerosis and degeneration of the heart, are generally found in white males past middle life, while true aneurisms are found in negroes in early middle life, the proportion being one to four. As aneurisms of the heart are due to a weakened condition of the heart's musculature, the intoxications must be an etiologic factor. These may be acute, as in poisoning from phosphorus; prolonged fevers, as diphtheria, typhus and typhoid; or chronic, as in chronic alcoholism and gout. In connection with these intoxications we will consider those conditions of the heart muscle which predispose to aneurisms and rupture, namely, lesions due to disease of the coronary arteries. The terminal branches of the coronary arteries are end arteries, although it has been shown that the vessels of Thebsius, which open from the auricles and ventricles, breaking up into fine branches, which communicate with the cardiac capillaries, may be capable of keeping up the heart's vitality, even if some of the branches of the coronary arteries be occluded. 1. We may find anemic necrosis due to an infarct, the area being a white infarction, most common in the walls of the left ventricle and in the septum. This area is of a yellowishwhite hue, or may be turbid or of a grayish-red tint. It is often wedge-shaped or may be irregular. Microscopically, is seen an absence of muscle nuclei, leucocytes appear at the borders, which may themselves disintegrate; later at the border fibrous tissue begins to form; this may entirely replace the muscle fibers, which have lost their nutrition. Hyaline degeneration may take place in the infarct without the formation of fibrous tissue.

Sudden death may follow anemic infarction; therefore in such cases dissection of the coronaries should always be made. Rupture may also follow necrosis of the lesion. 2. Fibrous myocarditis, also extreme calcification, may be present, as shown in specimen No. 3. This may result from gradual change following anemic infarction or necrosis, or from narrowing of the lumen of the coronary arteries. This fibrous condition is most commonly seen at the apex of the left ventricle, but it may occur in any part. Hypertrophy is commonly associated with the process and always precedes the formation of a cardiac aneurism. 3. Septic infarct; these are seen in the smaller branches of the coronaries and give rise to small abscesses, which may perforate in any direction, forming what is known as acute ulcer of the heart.

As a second predisposing cause we have acute interstitial myocarditis. This is seen in some infections, as diphtheria, typhoid, acute endocarditis and pyemia. Gonococci have also been demonstrated in these localized areas. These areas are the seat of granular, fatty or hyaline degeneration, and are the starting points of a fibrous myocarditis. Parenchymatous degeneration may occur, induced by prolonged fever of infectious diseases, in which the muscle is flabby and pale generally and the muscle fibers are degenerated, due, probably, to direct toxic effect upon them. In such cases the muscle is friable and weak. Finally, we may have the fatty heart. Under this there are two distinct processes, namely, fatty degeneration and fatty infiltration. Fatty degeneration is common in old age, wasting diseases, the anemias and cachetic states. Phosphorus poisoning is also an active cause. Hypertrophy in valvular disease also contributes its share. The principal cause is coronary disease. The left ventricle is most often affected and is more or less flabby, of a light yellowish-brown color, and is fibrous. Microscopically, minute granules and drops of fat are seen in the swollen muscle fibers. Fatty infiltration is most often seen in the very obese, and is an increase in the subpericardial fat. This infiltrates between the muscle fibers and produces a pressure atrophy of them. This condition is usually most marked in the right ventricle and a cut section may show almost complete absence of muscular tissue. The cavities of the heart are usually dilated.

As arteriosclerosis is the most important etiologic factor in cardiac aneurism and rupture, I wish to call your attention to some of the most important changes which take place in this condition: First, its pathogenesis. This condition is a manifestation of disturbed nutrition of the vessels, both arteries and veins. It is not a true inflammation. Hurchard's idea is that in some cases arteriosclerosis is due to arteritic processes in the vaso vasorum, causing improper nutrition of the intima, then of the media, this leading to a retrogressive metamorphosis in the areas affected, with subsequent hypertrophy of connective tissue. Later real inflammatory changes take place in the media, adventitia and periarterial tissue. Thoma's idea concerning it is as follows: First, the diffuse variety; slowing the blood current is always followed by contraction of the media to accelerate the current. If this fails or is insufficient, the intima thickens by formation of a subendothclium layer of connective tissue in order to accelerate the blood current. Sooner or later retrograde changes occur in this tissue. The diffuse form usually affects the smaller vessels first and is always more marked in them. In the nodular form there is a weakening of the walls. This is followed by a compensatory thickening of the intima. This form is often associated with the diffuse form and usually affects the larger and medium-sized vessels. It also tends to affect especially the orifices of branching vessels.

Pathologic Anatomy.—1. Large- and medium-sized arteries are dilated, while the lumen of the smaller ones is narrowed. 2. The sclerotic process is often very marked about the orifices of branching vessels, which may even be closed by the thickening. 3. In large arteries, atheroma is the most common form. In smaller ones, hyaline degeneration followed by calcification is most commonly noticed. 4. Changes in the intima; areas of sclerosis are seen, first as grayish, later as yellowish, or yellowish-white, sharply circumscribed or diffusely outlined patches. They are usually soft at first, later becoming hard. Sclerotic surfaces may be smooth or covered with thrombi or ulcers. Retrogressive changes consist of fatty degeneration and calcification of the patch, afterward associated with true bone formation. If small areas of fatty degeneration occur in the intima, thrombi may form and become sclerotic. These later may separate and become emboli. Changes in the intima may also be due to disease of the vaso vasorum. The following changes occur in the media: The musculature may be thickened by hypertrophy or thinned by distension, depending on the formation of connective tissue; fatty degeneration or hyaline degeneration with calcification may occur; reactive inflammation sets in, with round-cell infiltration and formation of new vessels extending from the adventitia. This results in the formation of thick layers of connective tissue in the intima to compensate for the weak vessel walls. This thickening by connective tissue also takes place in the adventitia.

Thus, we see, rupture of the heart may be a sequel of many and varied processes, which, being themselves distinct, are very closely allied. We have now considered the most important predisposing causes, the active cause being decreased resistance of the heart or increased blood pressure, or both. Therefore, when we have conditions which predispose to heart rupture, it is very evident that every effort should be made to reduce and control the pressure of the blood within the heart. Rupture of the heart has been reported in a few cases due to crushing injury and blows received over the præcordia.

Demonstration of Specimens. Specimen No. 1.—We have here a heart which is enlarged, with an increased amount of fat. On the posterior surface, near the apex, is a slightly discolored, bulging area about as large as a dollar. This discoloration is due to infiltration of the muscular tissue by blood; at a point midway in the longitudinal direction of the ventricle and over the ventricular septum this infiltration has become subpericardial and has extended upward almost the full length of the ventricle and downward around the apex of the heart to the apex of the right ventricle, this area of dissection being two cm. wide by 15 cm. It is, at a point 4 cm. below the upper border of this area, that the pericardium ruptured, allowing the blood to escape into the pericardial cavity, which contained about 30 ounces of clotted blood and serum. The bulging area above men-

tioned at the apex of the left ventricle is a eardiae aneurism, the tissues of which are fibrous, retrogressive changes having occurred, causing a weakened condition; consequently the aneurism was produced. On opening the left ventricle, a blood clot is seen, which is continuous, through an opening in the endocardium, with the elotted blood which infiltrates the tissues, the point being directly at the apex of the left ventricle. The left ventricle is very much hypertrophied, its walls averaging 2½ em. in diameter, being of a grayish-brown color and friable. The endocardium is thickened, being whitish in color. The base of the aortic valves are hard and nodular. The aorta itself shows numerous small areas of atheroma, The left auricle is enlarged, its endocardium being very much thickened and white in color. The mitral valve is competent, but shows at its base indurated and thickened areas, and the dilatation and condition of the auricular endocardium shows mitral incompetency. The right ventricle is also hypertrophied as well as dilated, its trabeculæ being flattened and its muscular walls thickened, except at the apex, where it shows marked fatty infiltration. The pulmonary valves are normal. The right auricle is dilated, its endocardium being thickened and of a whitish eolor; the tricuspid valve shows very little change, except at its base, where it is somewhat thick. The coronary arteries, both anterior and posterior, show marked corrugation and lengthening. On dissection, they are diffusely sclerotic, as well as showing numerous atheromatous areas. Thus we see that in this case we have a true eardiac aneurism, which is necessarily chronic, the left ventriele being very much hypertrophied. The eause of the aneurism is a replacement of the muscular tissue by fibrous tissue, this becoming weakened and distended, the pressure exerted by the blood within the ventricles being sufficient to rupture the aneurism. A cut section of the whole clotted area shows the presence of blood not only beneath the pericardium, but infiltrated between the museular fibers of the whole heart wall.

The patient was 73 years of age, had used liquor all his lite, and was for 20 years employed in a gas plant; he was robust and of stocky build and gave no history of syphilis. Physical examination showed quite marked arteriosclerosis, radial pulse being hard and irregular in time and volume, this condition being exaggerated by muscular exercise. He was suffering from chronic alcoholic delusional insanity. Four days before his death he had several sharp stabbing pains about the region of his heart. He was placed in bed, given salines and nitrites, which gave him much relief, so that he was out of bed on the third day. The next day he was at the dinner table, when he suddenly expired.

Specimen No. 2.—In this specimen we find a rupture of the heart under a very different condition, namely, myomalacia cordis. In each case it is the left ventricle which is ruptured, the first one at its apex, which has been replaced by fibrous tissue. In this one directly through the softened wall of the ventricle about its middle, quite close to the interventricular septum. This heart is not markedly hypertrophied, neither are any of its chambers dilated. A dissection of the anterior coronary artery shows numerous atheromatous conditions, particularly near its origin. The posterior coronary artery shows, at a point 3 cm. from its origin, a diffuse thickening of the artery, whose lumen is narrowed at this point and is the seat of a recently formed thrombus. Thus we have the nutrition of the heart beyond this point greatly impaired by the cutting off of its blood supply. This area is diffusely outlined and of a grayish-white color. It is very friable and weak and is an anemic infarct. The appearance of the wound is similar to a gunshot wound, the ball having passed from within outward.

Specimen No. 3.—This specimen shows to what an intense degree the cardiac muscle may be impaired and still earry on the circulation. The wall of the left ventricle, excepting the septum, is filled with nodules varying from the size of a grain of wheat to a pigeon egg. Most of these fibrous areas show calcification to a greater or less degree of their centers. The papillary muscles are practically all calcified. The coronary arteries in this case show a diffuse arterioselerosis, the case being one of fibrous myocarditis with extreme calcification.

The regular January meeting of the Morgan County Medical Society was called to order by the President, Dr. Josephine Milligan, fifteen members being present. Dr. H. Woltman was elected to membership, and Dr. A. P. Bartlett to associate membership. The standing committees for the year were appointed by the president, also a committee of Ways and Means for the February meeting, for which an address by Dr. George H. Simmons, Secretary of the American Medical Association was announced.

The subject of the evening was Diseases of the Kidney. Dr. E. L. Crouch read a paper on Some Nervous Symptons of Bright's Disease.

SOME SYMPTOMS OF BRIGHT'S DISEASE.

E. L. CROUCH, M.D.

Assistant Physician Illinois Central Hospital for the Insane, Jacksonville.

In the various forms of Bright's disease the kidneys fail to eliminate the products of tissue waste, which are poisonous materials; and if this toxic matter is not eliminated through other channels and is retained in the blood, there may be produced a train of nervous symptoms usually known as uremia. These manifestations may be found in both acute and chronic nephritis, resulting directly from the toxemia, or indirectly through vasomotor irritation, causing an increased blood pressure and cardiovascular changes. Charcot found kidney disease in onethird of his cases of cerebral hemorrhage, which finding has been verified by other observers. One of the early symptoms in both acute and chronic nephritis is headache, usually situated in the occipital region. It is severe and of a bursting character and may be associated with giddiness. It may be present on waking and continue only through the morning hours. In acute uremia, it persists throughout the attack, with vertiginous seizures, syncopal attacks, severe palpitation, disordered sensations (special and general), itching of the skin, numbness, tingling of the fingers, and cramps in the muscles of the calves, particularly at night. Some subjects are victims to severe forms of facial neuralgia, others complain of great mental torpor with somnolence or even stupor. Speech is now and then slightly affected in the way of indistinct articulations or clipping of words. There may be an aphasia, also squinting or inequality of the pupils, Jacksonian convulsions, monoplegias or hemiplegias coming on suddenly or following a convulsion. The symptoms may simulate almost every form of organic paralysis of cerebral origin, which would seem to indicate some localized change in the brain which may not be apparent after death. Bright's blindness with partial or complete loss of sight, which may be temporary, may occur independent of any retinal change, or any alteration discernible with the ophthalmoscope. Deafness may also occur. These symptoms of disordered innervation may be explained to a large extent by a deranged state of the blood, both as regards its quality and its supply to the central nervous system.

Convulsions may come on unexpectedly or be preceded by headache and restlessness or various muscular agitations, such as twitching of the face and limbs, etc. The attacks may simulate ordinary epilepsy, hence they are sometimes called epileptiform convulsions. The spasm may be more marked on one side and cause a deviation of the head and eyes to that side; occasionally the convulsions are unilateral, but the affection of one side is not constant, the side involved varying in different fits. The convulsions often begin locally, but quickly spread. The pupils are usually dilated. Unconsciousness or drowsiness follows the convulsions. The fits are seldom isolated, usually several occur in a short time. Coma usually follows the convulsion, but may develop independent of the convulsive seizures, in which case it is preceded by headache and the patient becomes dull and apathetic. In these cases, there may have been no previous indication of renal disease, and unless the urine is examined, the nature of the case may be overlooked. In some of these cases, a condition of torpor persists for weeks and even months. The coma of Bright's disease is less profound and less stertorous than that which is produced by cerebral hemorrhage and the muscular failure commonly affects both sides alike. Cheyne-Stokes breathing is often present, sometimes in a very marked form. Asthmatic attacks may occur, which has been explained as resulting from spasm of the pulmonary artery, as well as from the edema.

Various psychic disturbances may occur, some peculiarity of or change in manner or temper, a lachrymose tendency, a feeling of stupidity, drowsiness, sometimes sleeplessness and occasionally a horrible restlessness, which is more distressing than any actual pain. This condition may be followed by mania with its various symptoms, hallucinations of the special senses, and various delusions.

In many cases there is a marked tendency to depression and profound melancholia may supervene, during which the patient may commit suicide. The nephritic psychoses resemble other toxic insanities and resemble an hallucinatory paranoia. As a result of cardiovascular changes in Bright's disease, we may find a condition known as chronic cerebral atrophy, which presents the symptoms of a premature senility.

I wish briefly to report two cases, the first a case of acute Bright's disease suffering from a toxemia; the second, a case of chronic Bright's disease suffering

from cardiovascular change.

Miss C., aged 18, family history negative. Since age of 14 had been wayward and at times would run away from home, being very hard to control. When admitted was maniacal, had hallucinations of sight and hearing, thought she could see and hear devils after her, was very much disturbed, had not slept or taken nourishment for several days; attack came on suddenly. Temperature when admitted was 101, pulse 100; was voiding very little urine, amount could not be ascertained; a specimen obtained by catheter was heavily loaded with albumen, numerous casts, both epithelial and hyaline, and some blood. This wild delirium continued for four days, when twitching and slight convulsive movements developed. She passed into a state of coma and died on the eighth

day in hospital.

Mrs. T., aged 53, widow, admitted to the Central Hospital for the Insane January, 1903; oldest brother was insane; very little personal history obtained. The duration of attack was given as nine months. Following loss of her husband, she lost interest in household duties, worried over her husband's death, became careless and untidy, had hallucinations of hearing, thought death of her husband was the result of her neglect, and for this neglect she was to be punished, cried a great deal, was very restless, walked the floor rubbing her hands, appetite was poor, at times refused food and thought it was poisoned. Patient was anemic, left ventricle hypertrophied, pulse 60, hard and tense. Urine contained albumen, hyaline and granular casts. Slight edema of feet and ankles. Mental condition remained unchanged. May 26, 1903, had two convulsions during the night, followed by coma, and died the next morning.

Dr. B. S. Gailey read a paper on Eye Conditions Accompanying Albuminuria.

EYE CONDITIONS ACCOMPANYING ALBUMINURIA.

Byron S. Gailey, M.D. JACKSONVILLE.

Early in the last century it was observed that many cases of albuminuria were accompanied by marked diminution of vision. It was not, however, until 1850 that Türck showed conclusively that the amblyopia of albuminuria was accompanied by structural changes in the retina visible to the eye. Statistics from various sources show that about 30 per cent. of cases having kidney lesions show eye changes. These changes take place principally in the optic nerve, retina and blood vessels, and consequently can not be seen without the aid of the opthalmoscope. Often the first indication of a serious kidney lesion is a rapid diminution of vision, which causes the patient to seek relief from the oculist, who soon discovers the characteristic appearance of the fundus, refers the patient to his physician for proper treatment. Most of the changes we find in the fundus are due to a sclerosis or degeneration of the arteries resulting in edema, exudation and hemorrhages, the edema often being so considerable as to obscure the optic disc. In the macular region, there is often a more or less definite arrangement of the exudate in the shape of a star. This is considered quite characteristic. The hemorrhages are often quite characteristic, being flame like or flame shaped. The severity of the fundus condition is generally, but not always, indicative of the gravity of the kidney lesion. I have a number of times found a condition of the fundus quite characteristic of albuminuria and found no albumen in the urine after repeated examinations, but later it appeared and was found in considerable amount. Sometimes frequently recurring sub-conjunctival hemorrhages are present in albuminuria, accounted for by the weakened condition of the blood vessels.

Choroiditis sometimes occurs in albuminuria. It develops and progresses slowly. Occasionally one or more of the extrinsic ocular muscles become paralyzed. Cataract sometimes results from faulty nutrition. The retinitis, occurring with the kidney complications of pregnancy, are the cases most likely to undergo resolution and get well, the fundus changes generally not going beyond a considerable edema with some exudation, and possibly slight hemorrhage. Excluding the albuminuria of pregnancy, the occurrence of retinal lesion in kidney disease must be considered as indicating a grave condition; in fact, in the majority of cases it indicates an early fatal termination. This is not strange when we remember that generally when the ocular symptoms of the disease appear the renal disease has reached a stage from which recovery is impossible. In the case of those who live under favorable conditions life may be prolonged for a few years, but the great majority die in from six to eight months. Often similar fundus changes are met with in meningitis, intracranial tumors and syphilis and diabetes. Examination of the urine will clear up the diagnosis.

An animated discussion followed these papers in which most members present joined. Dr. C. E. Black reported a case with a skiagraph of kidney showing calculus in situ. He also showed the calculus after the removal. This case was interesting in that a successful operation had been performed after a diagnosis by different physicians had been made by symptoms, by eatheterization of ureter, by skiagraph. and by operation and removal of calculus. Dr. Black said the surgical treatment of Bright's disease by decapsulation of the kidney seemed to promise more than scemingly hopeless cases recovered, or died later of some intercurrent disease. The success of many of these operations seemed to indicate that Bright's disease is a local disease with general toxemia rather than a systemic disease with localized kidney lesion. Dr. Norbury discussed the subject of mental and nervous symptoms accompanying Bright's disease. These cases belong to two classes: 1. Acute nephritis with profound toxemia. 2. Chronic cases, which are more important than the acute, because they can be helped if seen early and a diagnosis made. The basic trouble in these cases is arteriosclerosis, growing out of Bright's disease. Often the mental changes precede the urinary. Often a slight want of mental concentration; a slight amnesis, accompanied with insomnia, may precede frequent urination. It is only when the latter is noticed that an examination of the urine locates the source of the trouble. He reported a case in which amnesia. dimness of vision, hallucinations and paraplegia preceded marked urinary symptoms. Also a case of several years' sanding, in which marked Bright's disease was noted, accompanied by hypertrophied heart, with locality and persecution mania present, especially at night. The mental symptoms in these cases are due to toxemia incident to Bright's disease; arteriosclerosis or nutritional exhaustion. A great deal could be done in the way of elimination in cases seen earlier. Dr. Babcock was quoted as recommending blue mass in these cases.

DISCUSSION.

Dr. T. J. Pitner said that acute nephritis is a localized condition with general toxemia producing mental symptoms. Sub-acute and chronic cases are largely general, rather than local; that is, nephritis is only one symptom. Often the heart and kidney lesions progress pari passu. In all cases of insomnia or irritability, with other nervous or mental symptoms, the kidneys should be examined. He spoke hopefully of cases of Bright's disease where he formerly gave a gloomy prognosis. Some of these cases are still living twenty years after an unfavorable prognosis had been given. Mercury in the form of blue mass, in small doses, continued for a year or two often did good. Others reported cases bearing upon the subject.

Society adjourned.

DAVID W. REID, Secretary.

WABASH COUNTY MEDICAL SOCIETY.

The Society met Tuesday, January 30 at 2 p. m., at the office of Dr. G. C. Kingsbury, Mount Carmel. The following were elected officers for the cusning year: Dr. R. J. McMurray, President; Dr. S. W. Schneck, Vice President; Dr. G. C. Kingsbury, Secretary; Dr. J. Schneck, Treasurer.

The subject for the meeting was the experience of the members during the preceding three months in various departments of medicine. Papers, relating such experience, were read by Dr. C. F. Brian on "Ostetrics," Dr. S. W. Schneck on "Emergency Surgery," Dr. L. Lescher on "Pathological Surgery," Dr. A. D. French on "Malaria and Typhoid Fever," Dr. J. B. Maxwell gave a report of the Senn banquet.

WAYNE COUNTY MEDICAL SOCIETY.

The Wayne County Medical Society met in the office of Walters & Harlan, Jan. 10, 1906. Members present were G. A. McDonald, C. O. Truscott, W. M. Johnson, F. Bean, T. J. Hilliard, B. E. Garrison, J. D. Harlan and J. P. Walters. The meeting was called to order by the President, W. M. Johnson, at 1:30 p. m. Minutes of previous meeting were read an approved.

After the payment of dues, which was next in order, the Secretary reported a ease of hematuria, the history of which has some remarkable features. The subject was discussed by all present. The Secretary was requested to keep a record of the case and report at the next meeting. T. J. Hilliard then presented a case of spina bifida. Such cases are rare, several of the members having never seen a case. This case was remarkable, in that there is a fair prospect of spontaneous recovery. C. O. Truscott presented a paper on psoas abseess which was highly enjoyed by all present. B. E. Garrison read a paper on Palmer abseess which was freely discussed by all present. J. D. Harlan gave the technique of the Widal reaction in the diagnosis of typhoid fever.

Before adjournment T. J. Hilliard was called on for a speech, as this was the last time he met with the society before removing to his new field of labor, Kansas City. He recounted the pleasant hours spent with the members of the society in our various meetings. All the members present spoke, each showing his appreciation of the Doctor as a gentleman, a citizen and a brother practitioner of medicine, and each gave him a hearty handshake and wished him success in his new field of labor. The society adjourned to meet next April in Wayne City.

J. P. Walters, Secretary.

W. M. Johnson, President.

THE NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.

This society met in its thirty-second annual meeting at 10:50 a. m. Tuesday, Dsc. 5, 1905, in the M. E. Church at Streator. Wm. O. Ensign, M.D., of Rutland, president of the association, was in the chair, there being ten members present. After a short prayer by Dr. McVey, of Streator, City Attorney Lloyd Painter welcomed the association on behalf of the city. Response was made by Dr. Sexton on behalf of the medical profession of Streator. Dr. C. D. Chalfant made the address of welcome, to which Dr. Love, of Dana, responded. It was moved and carried that the usual roll call be dispensed with. The minutes of the previous meeting were read and approved. The treasurer's report was read, received and referred to board of censors.

The committee on necrology reported two deaths among the members during the year.

It was moved and carried that all visiting members be invited to take part in the discussion of all papers. Communications were then read from Drs. E. P. Niekoff, J. W. Stealy, A. W. Chandler, John C. White and Bayard Holmes, the latter regretting his inability to be present to read his paper entitled "Some Abdominal Infections."

Adjourned to meet at 1:30.

Afternoon Session.

Called to order at 1:30 p. m. Dr. Weis of Ottawa, presented a paper on "Use and Abuse of Diphtheritic Antitoxin." The writer claimed there is no need of death from diphtheria, unless in laryngeal form. Age makes no difference in the dosage of antitoxin. One hundred per cent, should be the recovery in pharyngeal, nasal or tousillar diphtheria. Antitoxin should be used early and in large quantities. In laryngeal diphtheria the smallest dose recommended by Dr. Weis was 4,000 units, repeated in 46 hours if temperature does not fall. The paper was discussed by Drs. Tweddale, Pearson, Marshall, Curry, Bonar, Turner, Kemp, G. A. Diens, Chalfant, Dr. Weis closing the discussion.

The Board of Censors reported favorably on the application of Drs. Charles L. Hamilton of Dwight, Clarence H. Kemp of Lacon, Harry E. Freeman of Millington, Thomas M. Dromgold of Scneca and John C. White of Scatonville.

On motion the secretary was instructed to cast the ballot of the association for the above named.

Dr. F. A. Turner, chairman of the Board of Censors, reported relative to the charges preferred against Drs. E. E. Rohrabaugh of Chicago and Wm. L. Rabe of Dwight for unprofessional conduct, the former for promiscuous selling of liquors to minors and others. Notice had been sent to each in October, 1905. The letter to Dr. Rohrabaugh was returned. A motion was made and seconded that Dr. Rohrabaugh be expelled. Moved as an amendment to postpone action for one year in order that Dr. Rohrabaugh might be found, if possible, and due notice given him. Amendment carried. Motion as amended prevailed. The report concerning Dr. Rabe stated that he had been expelled from the Livingston County Medical Society for selling liquor and had taken an appeal to the State Society. Moved and carried by rising vote that Dr. Rabe be expelled.

Dr. G. T. Love of Dana read the report of a case of acute "Cerebral Paralysis," which was discussed by Drs. Murphy of Dixon and E. P. Cook of Mendota. John Ross, M.D., of Pontiac, secretary of the Livingston County Medical Society, gave a very interesting paper on "County Medical Society Organization." He reported the organization of Livingston County to be very complete and the attendance at their meeting exceptionally large. This paper was freely discussed by Dr. C. D. Chalfant, secretary of the La Salle County Medical Society; Dr. Knoblauch of Woodford County, who claimed their societies had been sleeping for fifteen years, but were now awakening; Dr. White, president of the Bureau County Medical Society; Dr. Schoenneshoefer of Lostant, as chairman of Committee of Arrangements of the La Salle County Medical Society, who also took occasion to invite the North Central Illinois Association to attend the county meeting at Lostant in 1906. Dr. Kemp of Marshal County said they had a good time in their county society, although it was hard work to get a quorum. Dr. Ross closed the discussion

Dr. Marshal of Pontiac read an exceedingly interesting paper on "Puerperal Sepsis," which elicited a lively discussion, participated in by Drs. Tweddale of Washburn, Jane Reid Keefer of Sterling, C. D. Chalfant of Streator, J. J. Pearson of Pontiac, E. S. Murphy of Dixon, E. P. Cook of Mendota, and Denslow Lewis of Chicago.

Dr. J. F. Percy of Galesburg read a paper on "Acute Exophthalmic Goiter and Its Treatment." He uses the salicylate of sodium in large doses. He finds no good from use of thyroid extract. The x-ray has done good in some obstinate cases. A free discussion followed by Drs. F. A. Turner, E. P. Cook, C. H. Kemp and J. C. White.

Tuesday Evening, December 5, 8 O'Clock.

The general public and physicians gathered at 7:30 to listen to an organ recital by Miss Deeds. Dr. E. P. Cook, second vice-president, introduced Dr. Wm. O. Ensign of Rutland, who delivered the president's annual address. President Wm. O. Ensign then introduced Dr. Denslow Lewis of Chicago, who gave the general address of the evening on the subject, "Ignorance as a Cause of Disease and Disaster." A vote of thanks was tendered Dr. Lewis. The Alpha Quartet then sang, closing the evening exercises.

Wednesday, Dcc. 6, 1905.

Called to order by the president. Dr. Thomas Croswell of Streator, aged 91 years, the oldest living physician in the district, was present at the meeting and was made an honorary member of the association. The changes in the constitution which were proposed a year ago were then taken up. The first was that Article 2, Section 2, should have the following words added to it: "And must be a member of the local county society, if one exists in the county in which he lived." Moved and carried that this part be laid over until next year. Article 2, Section 4, substitute for the words, "State of Illinois or elsewhere" the words "district No. 2, as established by Illinois State Medical Society." Moved and seconded that this amendment be adopted. Last Article 2, Section 7, should have the words "State of Illinois" changed to "district No. 2." Moved and seconded that this amendment be adopted. Last Article 9, Section should have added to it, Division 4, namely, "Committee on Program," the duty of which shall be to prepare a scientific program for the annual meeting. Moved and seconded that this addition to Article 9, Section be made. After discussion the motion was lost. There being four members who were delinquent five years in dues, their names were ordered dropped from the roll of membership, according to the constitution, for non-payment of dues. These were Dr. M. E. Buellfeld, Troy Grove; Dr. W. H. Fraser, La Salle; Dr. Samuel Hirsch, La Salle; Dr. Frank Hanson, S. Wilmington.

Communications from Dr. F. C. Robinson, Wyanet, and Dr. D. Egan of Chatsworth were read. It was moved that, inasmuch as Dr. Lewis of Chicago met with us and delivered an address and refused to be remunerated in any way, he be made an honorary member of the N. C. I. M. Association. Unanimously carried. Dr. Kilbourn of Ancona reported an interesting case of fracture of the spine, reviewing some symptoms of fracture of the spine. Discussion by Drs. Sanger Brown of Chicago, G. A. Dieus and E. S. Murphy of Dixon. Dr. Sanger Brown of Chicago gave a valuable paper on "Early Symptoms of Insular Sclerosis," which was greatly enjoyed. Discussion by Drs. Perisho, Kilbourn and White. This closed the numbers on the program, all having responded save two, Dr. Hendricks of Henry not being present and Dr. Holmes being detained by illness in his family. A unanimous vote of thanks was tendered Dr. Brown for his excellent paper.

The nominating committee reported as follows: President, J. J. Pearson, M.D., Pontiae; first vice-president, E. P. Cook, M.D., Mendota; second vice-president, E. S. Murphy, M.D., Dixon; secretary and treasurer, George A. Dicus, M.D., Streator; Board of Censors, F. A. Turner, M.D., Sandwich, chairman; J. M. Kaiser, M.D., Somanauk; J. A. Marshal, M.D., Pontiac; J. J. Knoblaugh, M.D., Metamora; Roy Sexton, M.D., Streator.

The selection of a place of meeting was left to the secretary, with a suggestion that, if possible, the association meet in the northwest part of the district. Dr. J. J. Pearson of Pontiac moved a vote of thanks to the profession of Streator for their hospitable entertainment. Carried. Dr. Chalfant moved that the president's address be entered in full on the minutes for the value it would be for future history. Unanimously carried. Moved that the nominating committee's report be accepted and the secretary cast the ballot for the officers of the association for the ensuing year. Dr. Pearson was asked to east the ballot for secretary and treasurer. He accordingly cast the ballot for the officers for the year 1906 as reported by the nominating committee, except for secretary-treasurer. Dr. Rosewell responded to an invitation to make a few remarks. Dr. Ensign, after a few well-chosen remarks, instructed Dr. Tweddale to conduct President-elect Dr. Pearson of Pontiac to the chair for installation. Dr. Ensign then introduced Dr. Pearson as president of the association for the year 1906 and declared him duly installed. It was moved by Dr. Ensign and carried that we make it an order of business to introduce our vice-presidents. Drs. Ensign and Chalfant were named by the chair to present and introduce the first vice-president, Dr. E. P. Cook of Mendota and Drs. Knoblauch and F. A. Turner to present and introduce vicepresident E. S. Murphy of Dixon. Moved to adjourn to meet the first Tuesday in December, 1906. G. A. DICUS, Secretary.

NEWS OF THE STATE

Dr. J. A. Ikemire has located in Palestine.

Dr. Harrison, formerly of Dixon, has located at Chadwick.

Dr. G. T. Nelson, of Morris, fell recently and broke his leg.

Dr. A. K. Warner, of Chicago, has recently returned from a trip to Cuba.

Dr. Robert C. J. Myers has been made Commissioner of Health for Moline.

Dr. George A. Sihler of Litchfield was recently operated on for appendicitis.

Dr. William E. Schowengerdt of Champaign is seriously ill with typhoid fever.

The addition to the Marietta Phelps Hospital, Macomb, is practically completed.

The Minerva Hospital, built by Dr. John A. Colbourne, at Pontiac, has been opened.

Dr. Frank M. Hagen of Lincoln has been elected county physician of Logan County.

Dr. Marvel Thomas and wife of Gillespie arc spending the winter in the City of Mexico.

Dr. and Mrs. Benjamin E. Jones of Rock Island have gone to California for the winter.

Three eases of smallpox have occurred in the State Hospital for the Insane at Jacksonville.

Reports from Springfield state that the local hospitals are greatly overcrowded at present.

A new building for the Chicago Lying-in Hospital and Dispensary is planned at a cost of \$200,000.

Dr. R. Emory, of Peoria, has been indicted on the charge of murdering the child of Pearl Weaver.

Work on the Methodist Episcopal Memorial Hospital at Mattoon will be finished by the first of March.

Dr. Arthur H. Beebe has been appointed to a position in the Eastern Illinois Insane Asylum at Kankakee.

A dinner was recently given Dr. I. N. Danforth by the Therapeutic Club on the occasion of his seventieth birthday.

A suit for \$10,000 damages has been brought by William F. Kruger, Hoopeston, against Drs. T. C. and R. S. McCarthy.

The public schools of Bloomington, which were partially closed during the quarantine against diphtheria, have been reopened.

The vital statisties of the Chicago Health Department show that the average age of death has risen in fifty years from 13 to 31 years.

The new Washington Park Hospital, Sixticth street and Vernon avenue, was dedicated by a charity bazaar held January 31 to February 3.

At the annual meeting of Former German University Students, held in New York City, Dr. Carl Beck of Chicago was elected honorary president.

The Morgan County Medical Society will hereafter use the Jacksonville Public Library as a meeting place and will have space for its medical library.

Dr. A. H. Andrews has been elected Professor of Otology and Rhinolaryngology by the Faculty of the Chicago Eye, Ear, Nose and Throat College.

Dr. W. H. Scott, of Dallas City, was injured in a runaway recently, his horse becoming frightened and overturned the carriage, throwing him out.

It is rumored that a combination of retail drug stores is being organized in Chicago, to include some of the leading druggists in various parts of the city.

The Board of Trustces of the Eastern Illinois Hospital for the Insane at Kankakee has re-elected Dr. J. C. Corbus as superintendent of the institution.

Dr. H. H. Sherwood has sold his practice at New Windsor to Drs. C. C. Hubley and N. C. McLafferty. Dr. Sherwood has removed to Monmouth.

The finance committee of the Chicago City Council has granted Health Commissioner Whalan an additional \$10,000 for the use of his department.

The Physicians' Club of Monmouth were entertained recently by Dr. and Mrs. R. M. C. Ball. Dinner was served and response made to a number of toasts.

It is reported that the late Marshall Field was one of the largest contributors to the \$400,000 fund being raised for the remodeling of the Presbyterian Hospital.

According to Health Commissioner W. R. Parkes, Evanston is a remarkably healthy city. During the year 1905 there were only 209 deaths in a population of over 23,000.

Dr. J. B. Murphy has begun suit in the Superior Court against William J. Hylands of Philadelphia, Pa., to recover \$25,000 invested in a scheme promoted by the defendant.

The Commissioners of the Bartonville Asylum for the Incurable Insane are considering plans for a new building which will accommodate 100 patients and will cost \$30,000.

The Drainage Commission is preparing to ask Congress for authority to widen and deepen the Chicago River in order to increase the flow of lake water through the drainage canal. Dispatches in the lay press report the presence of a case of smallpox at Earlville, LaSalle County. Dr. C. F. Nelson has been sent by the State Board of Health to examine the case.

James H. Smith, nephew and heir of George Smith, one of the early bankers of Chicago, has given St. Luke's Hospital \$500,000 for the construction of a "George Smith annex" to the hospital.

It is reported that the Board of Managers of the Presbyterian Hospital will build an annex to the present hospital which will be equipped in the most comfortable and luxurious manner possible.

The Brokaw Hospital of Bloomington has elected the following officers: Dr. J. Whitefield Smith, President; Dr. John L. Yolton, Vice-President; Dr. Horace W. Elder, Secretary and Treasurer.

The heirs of the Warner estate have announced that they will complete the building of the Warner Hospital of Clinton and that an endowment for the maintenance of the building will also be provided.

Dr. Arnold C. Klebs delivered a public lecture on "Consumption and the Home," February 4, in the Public Library, under the auspices of the Chicago Medical Society. The meeting was largely attended.

A reprint on the subject of practical disinfection has been issued by the Illinois State Board of Health. The use of formaldehyd gas as a disinfectant for bedding, furniture and household effects is advised.

Health Commissioner Whalen has been notified of the transfer of Dr. J. H. Blanks as health officer of Zion City and the appointment in his place of Dr. M. J. LaRose. Dr. Blanks was an appointee of Deacon Speicher.

An agreement has been made between the Trustees of the John Crerar and Newberry Libraries, whereby the medical department of Newberry Library will be transferred to the Crerar Library, as soon as the new building is completed.

Dr. F. M. Stewart, Chicago, was found guilty of the charge of robbery in Judge Kersten's court January 29. It is claimed that he obtained \$110 from Felix Berard, who recently came to Chicago from Montreal. A motion for a new trial was entered.

In the suit between the two factions of the Board of Directors of the West Side Hospital, Judge Mack has issued an order in favor of Dr. D. A. K. Steele, restraining Dr. Thomas A. Davis from assuming the presidency of the Board of Directors.

Commissioner of Health Whalen, of Chicago, is endeavoring to have the ambulance service transferred from the police department to the department of health. In a letter addressed to Chief of Police Collins he has set forth his reasons for urging the change.

A special performance of "Babes in Toyland" was given at the Grand Opera House, Chicago, on January 29, for the benefit of the Children's Hospital Aid Society. Every seat in the house was sold and over \$3,000 was realized for the children's hospital of the city.

The Brainard District Medical Society, including physicians from eight counties, held its quarterly meeting at Springfield in the Lincoln Library on January 25. Papers were read by Drs. E. E. Hagler of Springfield, G. G. Dowdell of Clinton, J. M. Wilcox of Clinton and others.

The State Civil Service Commission announces an examination, to be held in February, for assistant physicians in the state hospitals for the insane. The examination will be open to all physicians between the ages of 25 and 35, and will include surgery, medicine and nervous and mental diseases.

At the annual meeting of the Children's Hospital Society of Chicago Dr. Frank Billings was re-elected President and Dr. Frank S. Churchill, Secretary. Dr. Billings, in his President's address, stated that since the organization of the society the number of beds for children in Chicago hospitals had nearly doubled.

St. Francis Hospital, Evanston, a charitable institution managed by the Sisters of St. Francis, reports 270 patients cared for during the year 1905, an increase of 52 over the preceding year. The work of the hospital has grown to such an extent that larger quarters are necessary, and a new building is contemplated.

Dr. Nicholas Senn entertained Surgeon-General Takaki of the Japanese Navy at dinner on February 10. Members of the medical service of the Army, the Navy, the Public Health and Marine-Hospital Service and the Illinois National Guard, as well as a number of guests from the local medical profession, were present.

The Board of Health of Peoria has renewed its fight on tuberculosis, declaring the disease to be infectious and subject to the same restrictions as other infectious diseases. The annual report of the Commissioner of Health shows that 143 of the 1,000 deaths occurring in Peoria during the last year were due to tuberculosis.

A report drafted by Superintendent Cooley and Dr. E. C. Dudley, of the Chicago Board of Education, has been adopted, providing for the examination of public school pupils suspected of tuberculosis. The superintendent has been given authority to keep children suffering from this disease from attending the public schools.

Attorney-General Herbert S. Hadley, of Missouri, declares that there is enough cause of difference between Missouri and Illinois on account of the sewage from the drainage canal to justify war between the two states. The drainage canal case was recently argued before the United States Supreme Court, and a decision rendered in favor of Illinois.

The nurses of the Visiting Association of Chicago were sworn in by Judge Mack as probation officers of the Juvenile Court. This action gives them authority to care for the sick and destitute children, in spite of the protests of parents, and also empowers them to keep crippled and disabled children from working until they are fully recovered.

The jury in the Circuit Court at Belleville returned a verdict in favor of Dr. Arthur M. Kohl, the defendant in a suit for \$5,000 damages in-

stituted by Charles Yaeger, who claimed that Dr. Kohl had, when called to attend him, made a diagnosis of smallpox, causing his confinement in the contagion hospital and the quarantining of his place of business.

A large addition will be built to St. Francis Hospital, Litchfield, which will more than double the capacity of the institution. The new building will be a three-story structure, the estimated cost being \$25,000. St. Francis Hospital was established in 1872, the present building having been erected in 1890. Its patronage has increased until a large addition has become a necessity.

Dr. E. L. Rivenburgh, 2649 North Forty-fourth Avenue, Chicago, was made defendant in a suit brought by George Boylan and C. Hellstern, who sought to recover \$35.00 paid for the treatment of their sons for stammering. Dr. Rivenbaugh stated that the boys did not take their treatment regularly. Justice Everett, before whom the case was tried, has not yet rendered his decision.

The Evanston Hospital Association is planning an addition to its present building which will increase the capacity of the hospital by thirteen beds. A new operating room, diet kitchen and children's nurseries are also provided for. The association has asked each one of the twentynine Protestant churches in Evanston to devote one service to presenting the needs of the hospital and raising money for it.

"Professor" J. F. Braun, of Hillsboro, was found guilty of practicing medicine without a license, and, in default of payment of the sum of \$100, was sent to jail. Prosecution was conducted by the State Board of Health. Braun claimed that his method of treatment was a mental one. Evidence was introduced showing that he had an office and an operating table and that he made a physical examination of his patients.

Dr. George A. Zeller, Superintendent of the Illinois Asylum for the Incurable Insane, Bartonville, has entered a protest with the State Board of Charities against the practice of sending to the institution large numbers of filthy and dangerous patients from Cook County. Dr. V. A. Podstata, Superintendent of the Cook County Institution, claims that he has sent such patients to Bartonville in accordance with the law.

The management of the Garfield Park Sanitarium, Chicago, was censured by the coroner's jury which investigated the death of Mary Blunk, the 17-year-old girl who committed suicide by drinking carbolic acid while an inmate of the hospital. The jury recommended that the hospital authorities use greater precaution hereafter in guarding poisons used in the hospital. Miss Blunk was suffering from melancholia at the time of her death.

The February meeting of the Morgan County Medical Society was held Thursday, February 8, at the Colonial Hotel, Jacksonville. Dr. George H. Sinmons, General Secretary of the American Medical Association and editor of *The Journal of the American Medical Association*, was the guest of the society and read a paper on 'Nostrums.' A large number of physicians from Peoria, Springfield, Jerseyville and other towns of the Sixth Councilor District were present.

Plans for the new Oak Park Hospital have been drawn and the work will begin in a few weeks. The site selected is on the northeast corner of Wisconsin avenue and Monroe streets. George Lyon Harvey is the architect. The building will be five stories and a basement, of brown vitrified brick, with stone trimmings. There will be accommodations for 90 patients. A modern and thoroughly equipped operating room will be provided.

Collier's Weekly has made the following announcement: Collier's will accept no advertisements of beer, whiskey or alcoholic liquors; no advertisements of patent medicines; no medical advertisements, or advertisements making claims to medicinal effects; no advertisement promising extraordinary returns, such as stocks in mining, oil and rubber companies. The editor reserves the right to exclude any advertisement which he considers extravagant in claim or offensive to good taste."

A joint meeting of the Central Wisconsin Medical Society and the Winnebago County (Illinois) Medical Society was held at Rockford on January 31, the principal subject for discussion being the treatment of tuberculosis. A committee composed of Dr. R. C. Bourland, Dr. Starke and Dr. Allaben prepared a report for presentation to the Winnebago County Medical Society, recommending the formation of a stock company to establish a tent colony and sanitarium for the treatment of tuberculosis. In the afternoon a banquet was held at the Nelson House, which was largely attended.

Dr. David J. Doherty, of Chicago, a trustee for a number of years of the Chicago Medical Society and a member of the Public Relations Committee, one of the most active and valuable members of the society, leaves on March 1 for the Philippine Islands for a stay of two years. Dr. Doherty goes to make a study of the languages and dialects of the Philippines and to complete a Filipino-English dictionary on which he has been working for some years past. He also expects to make a study of social and economic conditions among the Filipinos. Members of the Chicago Medical Society tendered Dr. Doherty a farewell reception and banquet Saturday, February 17, at the Bismark restaurant.

The Illinois Association of Military Surgeons held its annual meeting in Chicago on Dec. 9, 1905. A series of clinical demonstrations was held in Senn Hall, Rush Mcdical College. Dr. Nicholas Senn, Surgeon-General of the Illinois National Guard, demonstrated the method of amputation on the battle field. Major Charles Adams of the First Illinois Infantry, demonstrated suprapubic cystotomy, and Captain S. C. Stanton, of the same command, the examination of recruits. Dr. Henry W. Howard discussed the subject of fractures. After leaving the Presbyterian Hospital, the Association attended the clinic of Prof. David W. Graham at Rush Medical College. In the evening the officers present were the guests of Dr. Nicholas Senn at a dinner at the Rothen Stern Inn.

A case of interest to members of the medical profession, involving the question of responsibility in first-aid cases, was recently brought before Justice Whitney, of Peoria. On July 21, a son of A. R. Lettson was thrown from his horse and seriously injured. Dr. J. J. L. Finnell, who was the nearest physician, was called at the time of the accident. When the ambulance arrived Dr. Ulrich came as ambulance physician. The patient was taken to the Cottage Hospital, where the two physicians, assisted by Dr. Hasson as anesthetizer. cleaned and bound up the wounds and applied the bandages. Later on Dr. Foertor, the family physician, called at the hospital, removed the bandages and applied others. It was claimed by the parents of the patient that, as Dr. Foertor was the family physician, he should have been called in the first instance and that they were not indebted to the physicians who were called in the emergency. The court rendered a judgment in favor of Dr. Finnell for the sum of \$25 and the sum of \$5.00 each for Drs. Hasson and Ulrich. Notice of an appeal was given.

MEMBERSHIP CHANGES.

During the month of January the following changes have occurred in the membership of the Illinois State Medical Society:

NEW MEMBERS.

ILLINOIS.

BUREAU COUNTY.

Gernsey, H. M., Dover. Guillfoil, T. P., Arlington. Horner, C. T., Tiskilwa.

COOK COUNTY.

Allen, S. A. Allin, F. W. Alrutz, Louis 1'. Bingley, M. A. Davis, John S. Frazier, H. L. Gill, John J Learnes, Ciare C. Nuta, M. Ritchey, R. M. Strauch, August. Thackeray, W. T. Vopata, William J. Waggoner, J. E. Wolff, Maurice B. Wyland, G. V.

DE WITT COUNTY.

Chapin, C. W., Weldon. Spaulding, R. B., Clinton. Morris, Dr., Farmer City.

HENRY COUNTY.

Smith, M. H., Colona Station.

KANKAKEE COUNTY.

Graham, S. A., Hospital.

KNOX COUNTY.

Birmingham, T. T., Galesburg. Bryant, J. H., Galesburg. Nash, E. N., Galesburg. Bellwood, W., Abingdon. Grant, O. E., Galesburg. Bisson, M. M., Galesburg. Bisson, W. C., Abingdon.

McDONOUGH COUNTY.

Westfall, F. K., Macomb. Stockey, V. P., Colchester. Griffith, J. C., Bushnen.

McLEAN COUNTY.

Law, E. F., Weston.

MORGAN COUNTY.

Duncan, W. P., Jacksonville. Estis, R. L., Maradosia. McEnery, J. C., Jacksonville. Norris, F. A., Jacksonville. Walton, H. C., Jacksonville.

UNION COUNTY.

Lylerly, A. J., Jonesboro. Goodman, T. B., Ogden.

WHITESIDE COUNTY. Terry, H. A., Tampico.

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The following members have removed:

Mannus, W. G., Nortonville to Jacksonville. Watts, B. P., East Galesburg to Randall.

Otis, T. J., Seatonville to Grand Rapids, Mich. Cushing, F. O., Tiskilwa to Estavan, Canada.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of January, 1906, the following members of the Illinois State Medical Society became members of the American Medical Association:

Allen, S. A., Chicago.
Anderson, F. M., Decatur.
Barnes, S. D., Chicago.
Barnsbac, R. S., Edwardsville.
Bennett, Cleaves, Mattoon.
Dewitz, O. J., Chicago.
Eddy, W. L., Milan.
English, J. N., Gillespie.
Etherton, M., Carbondale.
Fox, Ralph, Bloomington.
Franke, W. E., Newton.
Gailey, D. S., Ashland.
Galbraith, G. H., Clifford.
Gilmore, W. S., Chicago.
Gray, A. W., Chicago.
Gray, A. W., Chicago.
Grizzell, C. C., De Soto.
Haines, W. E., Bushneil.
Hamil, Charles, Greenview.
Hanly, H. H., Havana.
Harding, P. D., Evanston.
Hill, W. C., Murphysboro.
Holmes, J. M., Monticello.
Irwin, W. L., Plymouth.
Johnson, C. N., Chicago.
Jones, Leroy, Hoopeston.
Jones, S. W., Danville.
Kalacinski, Felix, Chicago.
Kaull, W. M., Princeton.

Kershner, J. S., Dieterich.
Landis, B. F., Tiskılwa.
Littlejohn, H. C., Farmer City.
McDonald, J. H., Chicago.
Mefford, W. T., Chicago.
Moore, A. N., Mattoon.
Morgan, T. W., Virden.
Morris, E. V. D., Galesburg.
Orth, D. A., Chicago.
Paris, W. J. J., Cave-in-Rock.
Paul, W. H., Danville.
Pickard, J. C., Chicago.
Randall, J. N., Decatur.
Roberts, H. H., Maywood.
Sheets, V. L., Chicago.
Stewart, A. F., Oneida.
Sedgwick, H. M., Peoria.
St. Clair, W. H., Effingham.
Stewart, H. J., Kewanee.
Taylor, Buford, Westville.
Thilo, George, Chicago.
Thorpe, S. L., Decatur.
Wilhelmy, A. E., Decatur.
Wilhelmy, A. E., Decatur.
Wilkinson, C. H., Chicago.
Williamson, Marion F., Joliet.
Winbigler, B. R., Seaton.
Welker, J. W., Mattoon.
Walsh, W. E., Morri:

MARRIAGES.

Lewis C. French, M.D., Stonington, to Miss Anna V. Waters of Chicago, January 5.

James J. McGuinn, M.D., to Miss Helen Mabel Carroll, both of Chicago, February 14.

George W. Koch, M.D., Akron, Iowa, to Miss Frances Gilbert of Geneseo, Ill., January 1.

R. T. VAN METER, M.D., Dewar, Iowa, to Miss Marie Murdock of Kewanee, Ill., January 17.

FRANK R. MILLER, M.D., Everett, Wash., to Miss Daisy Wright of Canton, Ill., at Galesburg, January 10.

ELMER S. ALLEN, M.D., Arcola, Ill., to Miss Hannah Rowlands of Judson, Minn., at Chicago, January 23.

DEATHS.

ALEXANDER H. COOKE, M.D., died in Chicago, January 8, aged 83.

DANIEL L. ROBEY, M.D., died at his home in Stewardson, January 20, aged 77.

CHARLES H. PIERSON, M.D., died at his home in Avon, Ill., January 25, aged 80.

PHILIP F. LIGHTFOOT, M.D., died at his home in Murrayville, January 14, aged 82.

George G. Lyon, M.D. Pulte Medical College, 1888. died in Chicago, January 17, from paralysis, aged 45.

RICHARD L. KENDALL, M.D., of Aurora, Ill., died from nephritis, at San Diego, Cal., January 1, aged 33.

W. H. MILLER, M.D. College of Physicians and Surgeons, Chicago, 1883, died at his home in Chadwick, Iowa, January 1, aged 45.

DAVID BARRY, M.D. Medical College of Virginia, 1862, a surgeon in the Confederate Army, died at his home in Ashley, January 21, aged 70.

Benjamin A. Allison, M.D. Jefferson Medical College, Philadelphia, 1844, died at his home in Decatur, from paralysis, February 6, aged 89.

CLARK R. WARREN, M.D., a graduate of Rush Medical College of the class of 1876, died at his home in Chicago, January 2, from brain tumor, aged 65.

John W. Long, M.D., died at St. Joseph's Hospital, Chicago, from heart disease, while undergoing an operation for a malignant growth in the throat, January 23, aged 71.

JOHN WARNER, M.D., of Clinton, Ill., a practitioner of medicine from 1841 to 1852, and afterward a leading banker of his city, died at his home, December 21, from pneumonia, aged 86. Dr. Warner built and presented to the city of Clinton the Warner Hospital.

JOHN W. BAKER, M.D. Medical College of Ohio, 1883, a member of the American Medical Association, Illinois State Medical Society, Clark County Medical Society and the Esculapian Society of the Wabash Valley, died at his home in West York, January 29, aged 54.

Berthold B. Pirosh, a graduate of the University of St. Petersburg, Russia, 1877, professor of electrotherapeuties in the College of Physicians and Surgeons, Chicago, member of the United Hebrew Charities and of the medical staff for the Home for Aged Jews, member of the American Medical Association, Illinois State Medical Society, Chicago Medical Society and German Medical Association, died at his home in Chicago, January 25, aged 52.

ADDITIONAL CHANGES IN ILLINOIS.

REPORTED BY THE STATE BOARD OF HEALTH.

DEATHS.

Latham, S. C., at Enfield, Jan. 29, 1906.
Melze, Louis A., at Chicago, Dec. 28, 1905.
Rawlins, John W., at Jewett, Feb. 4, 1906.
Stevens, B. F., at St. Jacobs, Dec. 9, 1905.
Driver, Amos, at Carrollton, Jan. 30, 1905.
Gross, Frank W., at Chrisman, Jan. 28, 1905.
Baumer, Franz, at New Athens, in January, 1906.
Harris, Colmore, near Boos Station, May 7, 1905.
Lapsley, Fred W. R., at Chicago, in January, 1906.
Tyler, Abbie C., at Warren, Mass., in January, 1906.
Webster, Charles L., at Cleveland, Ohio, Dec. 22, 1905.

O'Mahoney, Lafayette, at Dennison, Texas, Dec. 13, 1905.

Sturgeon, Clarence E., at Clarion, Iowa, in December, 1905.

Steger, R. W., committed suicide in New York, Jan. 10, 1906.

Blaisdell, Edward C., at Soldiers' Home, Quincy, Dec. 22, 1905.

Shamhart, George, in North Muddy Township, Jasper county, Jan. 24, 1906.

CHANGES OF ADDRESS.

CHANGES TO CHICAGO.

Lereh, W. H., from Mise. to 38 East Harrison Street, Chicago.

Hume, Charles, from Mise. to Hotel Windsor-Clifton, Chicago.

Cogswell, John Golder, from Oktaba, I. T., to Cook County Hospital, Chicago. Collier, Clinton C., from Cook County to 92 State Street, Chicago.

Else, John Earle. from Cayuga, N. D., to Cook County Hospital, Chicago.

Hewitt, Henry M., from Polo, Ogle County, to 390 North Clark Street, Chieago.

Anderson, Axel Walfrid, from Cook County, to 9139 Commercial Avenue, Chicago.

McKay, John Alexander, from Langdon, N. D., to 2400 Dearborn Street, Chicago.

Peterson, Jeanette Dow, from Chesterton, Ind., to 4630 Indiana Avenue, Chieago.

Poor, Nellie C., from Urbana, Champaign County, to 6617 Kimbark Avenue, Chieago.

Smith, Turner Burton, from Grand Ridge, LaSalle County, to Presbyterian Lospital, Chicago.

Holland, Armatus S., from Elmwood, Peoria County, to 2200 West Adams Street, Chicago.

Brown, John Bernard, from Rossville, Vermilion County, to 408 West Sixtyfirst Street, Chieago.

Hume, William Allen, from Misc. to Hotel Hays, Sixty-fourth Street and Lexington Avenue, Chicago.

Loekyer, C. Douglas, from Prairie View, Lake County, to corner One Hundred and Eighteenth Street and Haward Avenue, Chicago.

CHANGES FROM CHICAGO.

Cruteher, Howard, from 103 State Street to Colorado.

Doherty, David J., from 582 LaSalle Avenue to Mise.

Thomas, V. D., from Chicago to Zeigler, Franklin County.

Wheeler, Russel H., from 2140 Wabash Avenue to Gardner, Grundy County.

Young, Eugene Yetman, from 1071 Herndon Street to Mansfield, Piatt County. Bain, Walter Gelvin, from 6330 Kimbark Avenue to Champaign, Champaign County.

Beebe, Arthur Herbert, from 2282 West Twelfth Street to Kankakee, Kankakee County.

Hannon, Horaee B., from 764 West Madison Street to Arlington, Bureau County.

Miller, George L., from 125 Twenty-fifth Street to Springfield, Sangamon County.

Morrison, Winfield S., from 2646 Calumet Avenue to Minonk, Woodford County.

Sladek, Bohumil, from 1335 West Twenty-seeond Street to Hawthorne, Cook County.

Walk, Frederick D., from 271 Jackson Boulevard to Green River, Henry County.

CHANGES IN CHICAGO.

Colver, Harley Ross, 3179 Ashland Avenue to 54 Seminary Avenue, Chicago. Ruare, Grace Louis, from Hahnemann Hospital to 69 Douglas Place, Chicago. Brownstein, Simon, from 374 South Halsted Street to 534 West Taylor Street, Chicago.

Denkinger, Fred Carle, from 3413 Vernon Avenue to 553 Larrabee Street, Chicago.

Langford, W. Deltorist, from 39 Burton Building to 2628 Wabash Avenue, Chicago.

Kolar, Edward E., from 379 West Eighteenth Street to Eighteenth and Fisk Streets, Chicago.

Atherton, Clesson C., from 172 South Jefferson Street to 61 West Van Buren Street, Chicago.

Fawcett, Clayton E., from 1076 Sacremento Avenue to Chicago Homeopathic Hospital, Chicago.

Goebel, Alfred William, from Forty-ninth Averue and Thomas to St. Elizabeth Hospital, Chicago.

Ohls, Henry G., from 103 Dearborn Avenue to East Ravenswood Park and Foster Avenue, Chicago.

Yeakel, William K., from 1239 West Berteau Avenue to 2682 North Fortysecond Avenue, Chicago.

CHANGES TO ILLINOIS.

Caulk, W. H., from Misc. to Sorento, Bond County. Freemon, Joel C., from Misc. to Argenta, Macon County. Royal, Andy, from Misc. to Wrightsville, Greene County. Plack, S. Morton, from Misc. to Moweagua, Shelby County. McElroy, J. J., from Misc. to Rossville, Vermillion County. Bartlett, A. T., from Misc. to Jacksonville, Morgan County. Braden, W. C., from Misc. to Kampsville, Calhoun County. Beecher, Charles Edwin, from Misc. to Gibson, Knox County. Allen, J. R., from Arkansas to Fancy Prairie, Menard County. Erwin, Oliver Perry, from Misc. to Medora, Macoupin County. Hogan, Earl A., from Misc. to Shawneetown, Gallatin County. Kuhn, LeRoy Philip, from Misc. to Fairbury, Livingston County. Brown, Louis Sylvester, from Misc. to Hillsboro, Montgomery County. Haughton, Nicholas J., from Misc. to Janesville, Cumberland County. Unkrich, Charles R., from Delavan, Wis., to Monmouth, Warren County. Pannenborg, Arthur H., from Hammond, Ind., to Collision, Vermillion County. Morgan, Frank Russell, from Benton Harbor, Mich., to Towanda, McLean County.

CHANGES FROM ILLINOIS.

Hollister, Wilber L., from New Salem, Pike County, to Misc. Osborne, W. S., from Deer Creek, Tazewell County, to Misc. Gaige, Frederick A., from Vandalia, Fayette County, to Misc. Worrell, William B., from Cable, Mercer County to Arkansas. Rose, P. W., from Simpson, Johnson County, to St. Louis, Mo. Barlow, Nathan, from Stronghurst, Henderson County, to Misc. Morgan, Luther H., from Anna, Union County, to Dover, Tenn. LaBaum, Lydia H., from Batavia, Kane County, to Roanoke, Va. Maness, William G., from Jacksonville, Morgan County, to Misc. Mellen, W. A., from Rockton, Winnebago County, to Beloit, Wis. Bushee, Grant B., from Buda, Bureau County, to Clinton, Iowa. Castro, Jabez Clifford, from Belleville, St. Clair County, to Misc. Powell, Calvin B., from Mound City, Pulaski County, to Bailey, I. T. Rook, Charles W., from Bowen, Hancock County, to Julesburg, Col.

Alverson, George W., from Cary Station, McHenry County, to Misc.
Wakefield, Arthur Paul, from Springfield, Sangamon County, to China.
Williams, Robert Jay, from Rossville, Vermilion County, to Penee, Ind.
Runde, Frederick W., from Kampville, Calhoun County, to St. Louis, Mo.
Rockey, Amos P., from Assumption, Christian County, to Los Angeles, Cal.
McGrath, Benjamin R., from Savannah, Carroll County, to Grand Island, Neb.
Bright, James Barlow, from Bently, Hancock County, to Russellville, Indian
Territory.

CHANGES IN ILLINOIS.

Watson, S. M., from Delhi, Jersey County, to Newbern, Jersey County. Krohm, Henry W., from DeWitt County, to Weldon, DeWitt County. Gray, Alexander, from Cabery, Ford County, to Kempton, Ford County. Henry, Gilbert H., from Payson, Adams County, to Eldara, Pike County. Wood, Harry, from El Dara, Pike County, to Hamburg, Calhoun County. Dugan, W. J., from Paris, Edgar County, to Lovington, Moultrie County. Phipps, W. C., from Seeor, Woodford County, to Dewitt, DeWitt County. Blakley, P. W., from Galatia, Saline County, to Marion, Williamson County. Woodward, Joseph T., from Elkhart, Logan County, to Lincoln, Logan County. Wilmot, C. M., from Lawn Ridge, Marshal County, to Edelstein, Peoria County. Talbot, Charles W., from Secor, Woodford County, to Braidwood, Will County. Peavler, Hugh, from Spring Garden, Jefferson County, to Ina, Jefferson County. Logan, Harry Lambert, from Elba, Gallatin County, to Salem, Marion County. Harris, H. L., from Gibson City, Ford County, to Bellflower, McLean County. Heilig, George N., from Wetang, Pulaski County, to Pulaski, Pulaski County. Harrison, Charles N., from Dixon, Lee County, to Chadwick, Carroll County. Fouser, Hiram, from Grand Park, Kankakee County, to Harvey, Cook County. Early, Henry C., from Sorento, Bond County, to Granite City, Madison County. Donovan, C. J., from Forsyth, Maeon County, to Clarksdale, Christian County. Adkins, Albert E., from Metropolis, Massae County, to Brookport, Massae County.

Baker, Oswald E., from Cougerville, Woodford County, to Dunlap, Peoria County.

Bowers, Daniel W., from West Salem, Edwards County, to Calhoun, Riehland County.

Clark, N. S., from Boon, Jasper County, to Wheeler, R. F. D. No. 2, Jasper County.

Dinges, Eugene George, from Red Bud, Randolph County, to French Village, Lounty.

Dunlap, James A., from Hammond, Piatt County, to Sullivan, Moultrie County.

Grant, Osear Emanuel, from New Windsor, Knox County, to Princeton, Bureau County.

Guilfoyle, Thomas P., from Mendota, LaSalle County, to Arlington, Bureau County.

Hamm, Malfred, from Mount Olive, Macoupin County, to Madison, Madison County.

Hankins, Otto K., from Swan Creek, Warren County, to Monmouth, Warren County.

Hoffman, Gideon H., from Yorktown, Bureau County, to Kewance, Henry County.

Johnson, Uriah H., from Rosielare, Hardin County, to Temple Hill, Pope County.

Littlefield, H. A., from Carthage, Hancock County, to Plymouth, Hancock County.

McMackin, Curtis C., from Rankin, Vermilion County, to Roanoke, Woodford County.

McMurray, R. J. from Linn, Wabash County, to St. Francisville, Lawrence County.

Murchison, J. C., from Tablegrove, Fulton County, to Littleton, Schuyler County.

Pershing, Frank O., from LaHarpe, Hancock County, to Dallas City, Hancock County.

Reeves, J. Trumbell, from Vandalia, Fayette County, to Shobonier, Fayette County.

Shasted, Thomas H., from Charleston, Coles County, to Marion, Williamson County.

Stone, John W., from Springerton, White County, to Mill Shoals, White County.

Squire, John Peters, from Granite City, Madison County, to Alton, Madison County.

Tannus, Tannus Ferris, from Bloomington, McLean County, to Clinton, DeWitt County.

Tidewell, William F., from Corinth, Williamson County, to Marion, Williamson County.

Watson, James E., from Otterville, Jersey County, to North Alton, Madison County.

Zeigler, Charles S., from Marietta, Fulton County, to Bushnell, McDonough County.

Coleman, James H., from Carterville, Williamson County, to Marion, Williamson County.

Golightly, Alonzo, from Carbondale, Jackson County, to Dewmaine, Williamson County.

Stein, John Henry, from Deer Creek, Tazewell County, to Mackinaw, Tazewell County.

Johnson, Perry C., from Champaign, Champaign County, to Neoga, Cumberland County.

Fletcher, Marcus S., from Danville, Vermilion County, to Georgetown, Vermilion County.

Mackenzie, William Alexander, from Chester, Randolph County, to Sparta, Randolph County.

Culhave, Thomas H., from Peoria, Peoria County, to Rockford, Winnebago St. Clair County.

Dunlay, Isaiah H., from Marlow, Jefferson County, to Opdyke, R. F. D. No. 3, Jefferson County.

Jouett, Emerit Edward, from Woody. Green County, to Carrollton, R. F. D. No. 1, Green County.

Ihne, Alfred J., from Bunker Hill, R. F. D. No. 18, Macoupin County, to Fosterburg, Madison County.

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ORIGINAL ARTICLES

THE REQUIREMENTS OF SCIENTIFIC NURSING.*

J. WHITEFIELD SMITH, B.S., M.D.

President of the Staff of Physicians and Surgeons, Brokaw Hospital, Bloomington, III.

BLOOMINGTON, ILL.

Mr. President, Members of the Graduating Class, Ladies and Gentlemen:

It is the custom, and a very befitting one, to recognize the accomplishments of educational achievements by an appropriate public service, known as a graduating exercise. The custom has grown out of the fact. no doubt, that civilized nations have seen fit to pay tribute, not only to genius, but to intellectual attainments that look forward to the betterment of the race, realizing that the progress and prosperity of mankind are largely due to the march of human intellect. All educational institutions, the public school, the college and the university have granted to their students, at the completion of the prescribed course, a testimonial, known as a literary degree or diploma, in evidence of the proficiency and work attained by the student. In the various departments of the great universities, the legal, the medical and the musical, like recognition is granted in these specific fields of education, and during the last few years such acknowledgement has been bestowed on the professionally trained nurse. It is at this time that the officers and staff of the Brokaw Hospital desire to express their confidence in the ability of the members of this class that have so faithfully and conscientiously performed the duties that have been assigned them during the two and one-half years of their hospital training. This is an occasion of rejoicing; this is an occasion of exultation; this is a time for congratulations, and vet it is an hour for serious reflection. The responsibilities of life are matters that are ever worthy of serious reflection, and more particularly are they serious when they involve, as they do in the case of nursing, questions not only of health and comfort, but also of life.

Every vocation of life worthy of the name is characterized by responsi-

^{*}An address at the graduating exercises of the nurses of Brokaw Hospital, Feb. 5, 1996.

bility. We can not avoid responsibility. It confronts us at every turn, and the only reasonable solution is to meet it intelligently and courageously. The responsibility of the nurse is of great importance, and hence the necessity of a preparation that is thorough and adequate. Aside from natural gifts and particular aptitudes for this profession, the element of a common education at least demands broad-minded consideration. The ends to be attained by education are so manifold that it is quite impossible to believe that any successful professional career could be founded on anything short of a common English education. Education develops the latent powers of the mind; it strengthens the faculties, broadens the capabilities, deepens the judgment. Education gives to the mind breadth of scope and catholicity of content; education disciplines and trains the mind to greater possibilities and usefulness. An uneducated woman may become a good nurse, but never an intelligent one. She may perform her duties conscientiously, under competent supervision, but she must ever need direction. In an emergency or crisis she is quite at sea and is lacking in resources. Therefore, in the requirements of scientific nursing, the matter of a general education as a preliminary qualification is an important consideration. It is supposed that every woman that enters a training school for nurses should have these mental qualifications that are the result of common education in order that she may acquire the skill and proficiency in nursing that a thorough course in a hospital can afford. But there are other mental attributes that are also essential in the requirements of scientific nursing. She should have an aptitude for the calling. She should have a real love for the work or the arduous duties of her profession will become a burden. She should possess tact, executive ability and an unassumed dignity that will command the respect of her patients. She should be possessed of self-control, poise and equanimity that will merit the respect and confidence of her patients. She should have a cheerful disposition and a kindly manner that will inspire hope; she should possess integrity and sincerity of purpose that will win esteem. She should have a sunny, hopeful disposition, always happy and agreeable; sympathetic, yet philosophical; she should have a keen penetration, seeing beneath all pretense; she should be immensely practical and farsighted, having good judgment, strong purpose, and the ability to carry out definite plans with fidelity. It has been well said that "the true nurse is not a manufacture, but an independent, growing personality. Intelligent brain, kindly nature, sympathetic heart and skilled hand must be united. She is a living soul, as well as an active body, and the two must blend their forces to make her life a blessed harmony. The successful nurse is largely so by virtue of her own inherent fiber. Efficient work, however, in any line of learning or industry, requires more than simple intelligence and kindliness of nature. Skill, such as can come alone from a training adapted to meet the requirements of each particular trade or profession, is an absolute necessity. Nature and environment serve to develop in each man and each woman individual traits of character and habits which fit them especially for certain lines of work." Presuming that the nurse has the

requisite qualifications in a general education, and the necessary mental attributes of mind and heart, the next important qualification that we may consider in the requirements of scientific nursing is skill. This is attained only in a thorough course of training. It consists in a special education with this particular end in view; and here it would seem necessary to define the term education. Education is not simply the acquirement of knowledge. It does not consist in storing the mind with facts; neither is it comprehended in the term learning, for one may be learned and yet not educated. The terms are not synonymous; learning is not education. Learning is something we possess. Education is a cultured growth—a part of one's self, and if we keep these distinctions clearly in mind we can readily see how one may be very well learned—that is, informed-and not well educated, or that one may be educated without a vast amount of knowledge. "Education is the development of the faculties or germs of power in man, and the training of them into harmonious action in obedience to the laws of reason and morality." In the acquirements of skill in the professionally trained nurse, the stress of emphasis is to be placed on the word "trained," and from the first day that a pupil nurse enters a hospital or training school for nurses with the view of becoming a graduate nurse this important fact should be kept prominently in mind, and, indeed, such is the case, for she begins with the practical duties of her profession at once and takes up the theoretical and technical work as she progresses. It is here the word "trained" receives its full force and meaning. In this particular the training of nurses is unique; the training in the practical duties precedes the theoretical, which is the reverse order of the professional schools of the world, wherein a theoretical knowledge is attained during the course of study, and after graduation the practical features of the profession must be acquired. Theory and practice are inseparable in the preparation of trained nurses; theory has done more perhaps to elevate the standing of the profession than clinical experience alone could have done, but each is important and absolutely essential in the proper training for this profession. First of all. the nurse must be trained in the domestic duties of the hospital or training school in which she is educated. The presentative powers of the mind are called into use, and she should begin at once to school herself in habits of careful observation. She should learn to use her eyes and see at a glance the condition of things about her. She should familiarize herself with things which she is to use in her work and have them arranged in an orderly manner in her mind, but not alone should the utilities have an orderly arrangement, but there should be a place for everything, and everything should be in its place. She should never pass through a ward without training her eyes to observe the conditions of the patients, beds, tables, chairs and window sills; this may be done by a cursory glance, and if anything is out of order that can be arranged or righted in a moment she should not fail to attend to it. She should also note the temperature of the ward, the ventilation, and if the ward is properly lighted for the comfort of the patient or as the needs may require. Let these observations become a habit, the result of training; let the

nurse learn to be systematic and methodical in her work, and it will save not only unnecessary steps, but the appearance of the ward will always be presentable. If attention be given to the little details of the work, much valuable time will be saved. Whenever any article is used in the requirements of the ward, when it is no longer needed or in use, it should be put away in its proper place; otherwise the work is increased instead of lessened, and there must come a general tidying-up time with more or less confusion and disturbance to the patient. It is said that "order is Heaven's first law." Imagine the world without this faculty, everything out of harmony. The cosmos would become a chaos. There is nothing so subversive of good government or the control of one's surroundings as the lack of order; there is nothing so fatal to one's success many times as the confusion that comes from lack of order. It begets habits of earelessness and absent-mindedness. Everything should have a place, and everything should be put in its place.

"A lawyer in court had the habit of throwing his spectacles, after reading something, up on the top of his head. A brother lawyer, who was something of a wag, bought or borrowed a half-dozen pairs resembling the old lawyer's glasses, and when he threw his glasses up on his head, engaged, as he was, in making his speech and arguing his eause, the wag would slip another pair of glasses on the table before him, and when he wanted to use glasses he would pick up and put on that pair, and then tilt it up, until he got six pairs of glasses on his head, and, of course, all the people in the courtroom were convulsed with laughter; and, placing his hand up to his head, he found it covered with spectacles. It is said to have so disturbed his equilibrium, that he became confused and lost his ease."

Another important virtue that must be learned in the domestic duties of the training school is patience. Patience is a virtue, and is of inestimable value in the profession of nursing. Indeed, no very marked degree of success can be attained without it. There are a great many trials that come up in the daily routine of a nurse's life that are very annoying and have to be met with fortitude and courage. It will not do to become impulsive or give way to the feelings under trying circumstances. Remember that calmness is the rarest quality in human life. If you permit the irritating outside influences to overcome you, you thereby acknowledge your inferiority by allowing them to dominate you.

Study each disturbing element impassionately and alone, bring all of the powers of your nature to bear on them, and one by one they will be dissipated like the morning mists that fade before the sun. Strength ean only be attained by eareful exercise and judicious training in these particulars. If you would learn to meet the great crises of life, you must learn screnity in your daily lives and be patient and self-reliant. Punctuality must receive its due recognition in the domestic duties of the training school as one of the essentials in the requirements of scientific nursing. The nurse must be trained to be punctual in the administration of her duties. Her obligations to the patient demand this of her and her fidelity to the attending physician's orders require it. If it be not a

characteristic trait of the nurse, it should be acquired by training. The thousand things of the hour claim her attention, and frequently her own pleasure and happiness must be sacrificed in order to meet its demands, but when the time arrives for the performance of some part of her duty it can not be postponed or delayed without possible injury to the patient. It would seem that nearly all of the nurse's duties are very exacting, and, indeed, they are, but the real dignity, character and honor lie in the fact that it is a daily self-sacrifice, not to the independence of health and strength, but to dependent suffering humanity. This condition calls out the noble and generous impulses of her heart and makes these cardinal virtues of her life shine forth with transcendent beauty. It robs labor of its weariness, makes work a pleasure, and toil becomes a blessing. The habit of punctuality naturally grows out of her responsibilities, and faithfulness to the duty of the hour becomes a part of her life. There is a dignity in self-reliance that I want to mention, for it is the one great password to success, and for this reason it is an essential element in the training of a skillful nurse. "Self-confidence sees the possibilities of the individual; self-reliance realizes them. Self-confidence sees the angel in the unhewn block of marble; self-reliance carves it out for himself." Self-confidence in the nurse looks beyond the limits of the sensible horizon and sees the halo of success in the dim distance. Self-reliance guides her feet in the paths that lead up to it. Self-confidence looks out into the future beyond the vale that obscures her mortal vision and sees success robed in splendor and crowned with honor; self-reliance enables her to reach forth her hand and claim them for herself; but self-reliance is not the self-sufficiency of conceit; neither does it include the boastful features of vanity. It is the broad and unprejudiced survey of one's real and genuine abilities; it consists of the majesty of calmuess and the supremacy of self-control. Self-reliance does not permit the nurse to live in the shadow of another's greatness, but gives her independence by causing her to think and act and to depend ou herself. The nurse must learn to be self-reliant if she would become skillful in her profession and successful in her work. She must have confidence in her abilities, a confidence that is born of careful preparation and judicious training. She must have the satisfaction of knowing within herself that she has had the proper training and clinical experience to meet the emergencies and crises that may arise at any moment for many times; perhaps she will have to stand face to face before the awful tragedy of life, which we call death. Then is the time that she needs self-reliance. Then is the time that she needs to be undaunted and undismaved in order that she may work intelligently.

How may a nurse develop her self-reliance? Not by trying to do her work as well as her companions; not by copying after some skillful student; not by making the fatal mistake of sceking continually to surpass another, but simply in striving earnestly to surpass herself. If she does this she is moving in a uniform line of progress and is acquiring skill along with her mental growth. The true conception in life is the competition of the individual with himself—in his present striving to excel his past. Thus far we have been considering some of the essential

qualities that should be employed in the "training" undertaken by training schools for nurses, viz., observation, order, patience, punctuality and self-reliance, and this training comes properly in the domestic duties of the institution. The other feature of her professional education is comprised in the hygienic and medical responsibilities of her calling.

The hygienic and medical education of the nurse is a matter of great importance. This embraces not only the care in the way of personal attention, but in having the proper surroundings to facilitate the patient's recovery. Of these may be mentioned the proper temperature of the room or ward, ventilation, preparation of the bed and the general observation in medical and surgical cases that go to make up an intelligent record sheet for the inspection of the physician or surgeon. Again, she must be educated in the fundamentals at least of medicine and surgery, which have their basis in physiology and anatomy. The trained nurse must have a knowledge of materia medica and the application of remedies to diseases. She certainly should have a thorough knowledge of infectious diseases and methods of prophylaxis and hospital quarantine, together with a knowledge of asepsis, antiseptics, etc.

This instruction comes largely through the course of lectures given by the hospital staff of physicians and surgeons. A prescribed course of medical education is arranged and outlined according to the time of the student and the requirements for graduation. This instruction is given by didactic lectures, clinical instructions at the bedside, class work, quizzes and the personal assistance in the operative work. The course usually embraces the following: Lectures on anatomy, physiology, materia medica, obstetrics, surgical technic, general surgery, chemistry, gynecology, diseases of children, general medicine, nervous and mental diseases, hygiene, diseases of the eye, ear, nose and throat, etc. The course of lectures and instruction should be made eminently practical. The nurse should not only have a theoretical knowledge or a scientific knowledge of these subjects, but she should be trained in the art as well—that is, in the application of her knowledge in the care of the sick.

The education and training of a nurse is of no little consideration. In every enterprise of life there must be responsibility, and the staff of physicians and surgeons that undertakes to educate and train a class of nurses in their medical duties should ever be mindful of their own responsibilities; and, on the other hand, there is a just amount of responsibility from the nurse due to the staff. The class should strive to do earnest, conscientious work in order that their diplomas shall mean something to the world and be an evidence of a careful preparation for their life work, as is given in testimony by the signatures of the hospital officials and medical and surgical staff.

In the requirements of scientific nursing, in respect to the hygienic and medical education, there is one thing that can not be too strongly emphasized, and that is the matter of asepsis—cleanliness. "Cleanliness is next to Godliness." If, as we have observed, in the training of the domestic duties of the hospital, that "order is Heaven's first law," surely cleanliness is the greatest. Scientific nursing requires a thorough knowl-

edge of asepsis—of surgical cleanliness. The nurse must not have a vague idea of it and give her consent to its claims in an indefinite and patronizing manner, but she must comprehend its deepest meaning and most rigid requirements. In order to be skillful and successful she must be thoroughly conversant with every detail in the application and requirements of asepsis, ever remembering that the surgeon must rely on her with implicit confidence that she not only understands this subject, but that she will faithfully carry out the measures with unswerving fidelity and honesty of purpose. For, in a large measure, the surgeon risks his skill and professional reputation in the hands of the nurse to whom is intrusted the matter of the preparation of the operating room and of the patient in surgical practice. But, of far more importance still, the patient may lose his life from neglect in aseptic precautions or from sheer ignorance of their importance.

The world is ever new in ideas and methods. Science is constantly bringing to light new facts, new discoveries, new and better facilities for the treatment of disease, for the relief of pain and suffering, for lengthening the span of human life. The nurse that has received a proper training may reasonably claim a part of this honor, for it is quite as important many times to rightly administer these means as to originate them. There is, in this work, room for the exercise of the highest talents and virtues of the highest order. Have we, then, placed the standards too high? Have we placed the ideals beyond your reach? Have we taken the goal of your ambition out of the real world and carried it up into the realm of the ideal, beyond the hope of attainment? No, not at all; not if you have the proper conception of life and of destiny. Not if you remember that life is simply a succession of opportunities, and that destiny is the outgrowth of possibilities. Then let me say, in a closing word to this class, that your chosen profession is a high and holy one, justly claiming the sympathy and approval of the community, meriting the confidence and esteem of the commonwealth of the great state in which you reside, commanding the admiration and respect of the entire world.

Your chosen profession is elevating and ennobling—elevating, because it reaches down into the depths of despondency and gloom, and out of these dark solitudes brings the bright rays of hope and the sunny beams of joy and gladness.

Ennobling, because its worthy ambitions are removed far above selfishness; your work is a work of self-sacrifice and of self-denial; your work is not only a work of the head and hands, but also of the heart. Your duties lead you in the quietude of lonely hours, to seek the pillows wet with sobs, the cheeks bedewed with tears, the bed of thorns that pierce the heart and, bending o'er them with outstretched arms, say: "In His name, and for His sake, let me do something for this distress." What a broad sea of opportunities! What a wide field of possibilities!

But, as you go out from your alma mater, as you launch forth to grasp these opportunities and to realize these possibilities, remember that you will encounter storms and tempests, as well as glassy seas and sunny skies. There will be some waves of opposition, some currents of advers-

ity, some tides of misfortune. There will be impetuous blasts and sudden gusts from clouded skies, that seem to sweep everything before them while they last; but along with these there also will be balmy gales and gentle breezes. Your alma mater is not sending you forth without chart or compass, adrift on the ocean of time! The landing port of success ever shines brightly before you, safely guarded by beacon lights along the way. Herein are the fulfillment of her hopes and promises; herein are the fruits of your years of patient toil and earnest endeavors. If your efforts sometimes seem barren of results, do not be discouraged. Look bravely toward the future, in confidence and hope, and proceed undaunted in your way.

The question will come home to your hearts many times, no doubt. as it has to the thoughtful of all ages, "Why is there so much unnecessary pain, sorrowing and suffering in the world—why, indeed, should there be any? Neither philosophy nor religion can give any final satisfactory answer that is capable of logical demonstration, of absolute proof. There is ever, even after the best explanations, a residuum of the unexplained. We must, then, fall back in the cternal arms of faith and be wise enough to say, I will not be disconcerted by these problems of life, I will not permit them to plunge me into doubt and to cloud my life with vagueness and uncertainty." Here, it seems to me, is the realization of the lessons in observation, order, patience, punctuality and self-control. Here is the picture of that perfect "training" that enables one to look with an abiding faith and with an unfaltering trust into the mysterious future—that wonderful mystery of time that yet remains for us and, even in the presence of death, to work with intelligent minds, skillful hands and consecrated hearts. And may this be the hour in which you make this consecration: The dedication of the individual life to the service of others; the dedication of the individual life to this noble mission; the dedication of the individual life to this worthy profession. And, as you pass across the threshold of your alma mater and turn with a kindly glance and a lingering look to bid her good-bye, she closes her doors on you forever as students only to open them again to welcome you back as her alumni, to greet you with her warm sympathies, to receive you in the kindliest manner. The past is forever closed to you; all of its joys and pleasures, all of its raptures and delights, all of its charms and gladness, have gone back into the ocean of years that makes up a boundless eternity. Only in memory can they ever become real to you again; only in reverie and dreams can you live again these gladsome days, with their pleasant associations and happy companionships, for the inexorable past has gone back with all its message, all its history, all its records to the God who loaned you the golden moments to use in the preparation of your life work.

ARTIFICIAL HYPEREMIA IN SURGERY.*

Dr. Alex C. Wiener.

FROM THE CLINIC OF DR. WIENER AT THE CHICAGO CLINICAL SCHOOL.

CHICAGO, ILL.

Inflammation, like fever, is one of those genuine faculties of the tissues with which Nature has endowed the mammal organism for defense against and the annihilation of enemies which have invaded the system. Inflammation, therefore, is not a disease itself. It is merely a symptom or sign of the presence of some foreign substance in the living tissue which threatens its integrity. Inflammation is, then, analogous to the violent cough after a foreign body has lodged in the throat or larynx, or the increased stream of tears and the frequent winking of the lids following the entrance of a foreign body into the eye.

The cardinal symptoms of inflammation—redness, heat and swelling —are all a consequence of a local hyperemia. Hyperemia results either from a slackening or an acceleration of the blood current. Hence there is a venous or passive and an arterial or active hyperemia. It is the former type which accompanies inflammation for the purpose of removing a noxious substance and of forming new connective tissue. Active hyperemia is a physiologic occurrence in organs which are in activity. The most practical agency to produce local active hyperemia is heat. Of all the manifold means of applying heat, hot air has been proven supreme. As active hyperemia is not the subject of this paper, I will directly proceed to give an account of the curative results obtained by artificial venous hyperemia which I have, last year, scen in Professor Bier's clinic in Bonn and which I have observed for the last three years in cases of tuberculous and rheumatic affections of the joints. The first to employ artificial passive hyperemia for a therapeutic purpose was Ambroise Paré. Von Dumreicher explained the action of venous hyperemia which is so favorable to the formation of callus in retarded union of fractured bones with the supposition that the abundance of blood stimulates the regeneration of osseous tissue supplying an increased amount of nourishment. Later on Nicoladoni, Thomas¹ and Helferich have confirmed Dumreicher's observations. While I have no personal experience along this line, since I rely on the ambulatory treatment of fractures and on liberal doses of iodid of potash in threatened pseudo-arthrosis, I have seen, with the combined aid of active and passive hyperemia, a deep cavity in the tibia fill up with surprising rapidity.

A girl, 8 years of age, badly nourished and anemic, presented herself, in the summer of 1902, at my clinic with a tumor in the middle of the shaft of the left tibia. The diagnosis of specific ostitis and periostitis was made and for eight months iodid of potash administered, since the mother did not permit operative intervention. As no perceptible change took place during this time, the patient was finally operated on. The chiseling away of a thick involucrum exposed a sequestrum nearly four

^{*} Read before the Chicago Medical Society, Jan. 27, 1906.
1. Contribution to surgery and medicine, Part VI. The principles of the treatment of fractures and dislocations, London, 1886.

inches long and situated near the posterior wall of the tibia. No pus was found. With the aid of x-rays twice a week and passive hyperemia, the gap was filled with healthy bone in two months, while the formation of the epithelial covering took more than one year.

Varying with the tightness of application, the elastic bandage produces very different effects. Simple as the application of the bandage is in itself, it takes quite a little experience to meet just the requirements of a given case. It is evident that tight constriction is dangerous and harmful to the extremity when continued for over thirty minutes. For the reason that it lowers the temperature rapidly, Bier has signified it as "cold damming." On the contrary, warm damming is produced by applying the elastic bandage with a tension sufficient to compress the tender walls of the superficial veins, while the arterial circulation is not or but little encroached on. The patient, while under treatment, must be carefully watched. Coolness of the extremity, the appearance of vermillion red spots on the skin, complaint of pain or even incontinence are unmistakable signs of too severe a compression, whereupon the bandage must be removed at once.

In tuberculosis of joints the elastic bandage is applied for only one hour a day. In this way edema of the constricted parts is avoided. On traction, sufficient to produce a marked degree of stasis, the veins appear very much engorged and the skin assumes a bluish color. A slight pricking sensation toward the end of the hour is all the patient experiences. No discomfort, pain or edema must occur. The application is not to be made in the immediate vicinity of the afflicted joint; otherwise the place is immaterial. In treating the shoulder joint an elastic tube is used and held in apposition by a necktie and a loop encircling the chest, both made of muslin. A disc of soft felt protects the underlying parts against undue pressure. It is to be regretted that no way has been found as yet to have those frequent cases of tuberculosis of the hip-joint participate in the curative action of Bier's damming treatment. Misuse of the method has led to decubitus and even gangrene of the extremity. Chronic edema is another damage which may be laid to the charge of the noxious influence of constriction carelessly applied. In tuberculosis of joints complicated by fistula, this edema greatly increases the danger of mixed infection and erysipelas. Varicose veins, as it may easily be suspected, were never brought on by this treatment. In tuberculosis sicca venous stasis is of no avail. On the other hand, the cases complicated with pus infection are the ones most benefited. I have examined an old lady with general arteriosclerosis who was sent to Bier's clinic to have her arm amputated for an incurable mixed infection of a tuberculous inflammation of the elbow of long standing. After six weeks' treatment she had free and painless motion in the elbow joint and the fistulas had closed. Whereas her life was despaired of on admission, her general condition was then good. More than ten cases of tuberculous inflammation of the ankle joint I have examined at the different stages of treatment. Characteristic of them all was motion free of pain, actively and passively. The patients were encouraged to walk on the diseased foot as soon as the

pain had vanished. Furthermore, I was impressed with the complete absence of immobilizing dressings. If there are any axioms in medical science, the axiom of the necessity of complete immobilization in the treatment of tuberculous joints reigns supreme. Whatever arguments may be alleged in favor of immobilization, the facts show that immobilization is not the prime desideratum in the treatment of tuberculous joints. Three years ago I adopted Bier's treatment in tuberculosis of joints, with results not entirely satisfactory to me. After this first visit to Bonn, I freely confess that imperfect results are to be laid at the door of the surgeon who is doing the work. In all cases where adverse criticism may occur, the inference is permissible that mistakes in this apparently simple method have been made. On the other hand, its very simplicity may prevent those theoretical minds which I consider born, not made, from advancing along the right line and cause them to prefer more complex, because seemingly more scientific, methods of treatment. My own observations have fully borne out the correctness of Professor Bier's statement. I have been compelled to carry on this treatment in outdoor work and I have had to depend, to a large extent, on the intelligence and goodwill of the mothers. One case is illustrative: F. W., 3 years old, tuberculosis of the left ankle joint. The primary focus could no longer be established, since the leg had been operated on six months before. Two fistulas on the inside and outside below the ankles with an abundant discharge of green-yellowish pus. The foot held in an equinovarus position and could not be moved actively or passively. Treatment: The fistulas were packed with plugs saturated with concentrated carbolic acid and sealed with celluloid dressing. Damming with a rubber bandage for one hour each day. The fistulas healed up in the course of two months. The inner one opened again after four weeks and healed up in the course of another month. Joint movable in every direction. Boy walks and runs without difficulty and without a limp. The same patient had a tuberculous ulcer about the size of a 5-cent piece on the right cheek which healed up under carbolic-acid celluloid treatment in three months.

I have lately seen a child, two and one-half years old, with a combined tuberculosis of the synovial membrane of the astragalo-tibial joint and of the knee-joint. The foot, which was held in the usual equinovarus position, could not be moved. The region of the ankle and the whole foot shows edematous swelling. Knee flexed at right angles. Damming on the thigh for one hour each day mobilizes the foot in two weeks. No change, however, in edema. Mobility of the knee-joint only slightly increased. Forcible correction of the position of the knee-joint and fixation by method I have described in The Chicago Medical Recorder. The child permitted to walk at once on crutches, which were discarded after five weeks. This case, while by no means cured, illustrates the superiority of Bier's method over the immobilization treatment, which is imprinted so strongly on the mind of present-day surgeons. Now I come to an indication for the damming method, which I have not had much occasion to make use of myself, but which I have studied at Bonn.

It is in the treatment of acute infections of the extremities and of the head that Bier deviates most from time-honored principles. In fact, he revolutionizes our present mode of treatment to such an extent that even the mind trained in separating the hull from the grain in the current medical literature will follow his path hesitatingly. Yet Bier, in his publication in the Muenschener klin. Wochenschrift, Nos. 5, 6, 7, 1905, in Langenbeck's Archives of Surgery, makes such positive statements that it is impossible to resist the weight of his arguments. The superiority of his results proves his contention.

The fundamental difference between Bier's treatment and the one we have inherited from bygone generations consists in his view that inflammation is the biologic means of the organism to combat an intruder. Therefore, he denounces all antiphlogistic treatment as erroneous. Instead, he increases the supply of oxygen by slackening the current of the arterial blood. This is brought about by compressing the thin-walled veins of the extremity. The clastic bandage has to be applied in such a manner as to produce energetic venous stasis, without causing pain to the sufferer. Inasmuch as in acute inflammation comparatively light constrictions produce an immense hyperemia, it is apparent that the arterial blood current is not diminished by the damming method, but only slackened. The indications of the damming are (1) subacute mild inflammation of joints and soft tissues. These are rapidly relieved. (2) Acute purulent inflammations of soft tissues, either of the extremities or of the head. (3) Acute or subacute inflammations of joints and purulent arthritis, especially gonorrheal arthritis. The elastic bandage is at once applied for twenty or twenty-two hours.

As soon as pain or discomfort arises the bandage has to be removed and reapplied after some time at another place. Immobilization of the joints is contraindicated, also elevation of the limb, as this eauses suffering. Pain and fever disappear with surprising rapidity. After the temperature has become normal, small incisions are made in the soft parts and the pus is aspirated out of the joints. It is an every-day experience that phlegmons of the extremities are often followed by severe disturbance of function. Surgery prescribes large incisions to be made so as to secure free drainage. Necrosis of tendons may occur. The pus infection early recognized and treated by the Bier method at once, will not come to such a sad issue as that. Small incisions then suffice for the aspiration of the sterile pus. The tendons are not exposed extensively and not dried out by gauze drainage which carries their nourishing fluid to the outside. In acute arthritis, especially in those cases of traumatic and gonorrheal origin, early passive and active movements can be made and thereby fibrous and osseous ankylosis averted.

I am inclined to ascribe the startling success of Bier's method in acute purulent diseases not to the influence of increased arterial blood supply exclusively, but to the temporary arrest and subsequent stimulation of the lymphatic current. The former must necessarily produce an edema which is surcharged with antitoxins. It therefore seems appropriate to signify Bier's method as an auto-antitoxin treatment. In other words,

the toxins or waste products which result from the metabolism of the bacteria which produce the infection are arrested and accumulate at the seat of war, as it were. This view is in accordance with the findings of modern biology. In the light of advanced therapeutics, Bier's methods are the logical sequence of Pasteur's, Behring's and Roux's work, and they should not eall forth violent collision of opinion among surgeons, either from a practical or from a dogmatic point of view. Bier's work is marked with features which challenge an earnest trial on the part of every progressive surgeon.

TUBERCULOSIS OF THE MALE URINARY TRACT.*

ARTHUR DEAN BEVAN, M.D.

CHICAGO.

Within the last ten years there has been great development in the amount of knowledge we possess of tubereulosis of the genito-urinary organs. This development has been due to a number of causes, especially to the introduction of more refined means of diagnosis, and to a more careful study of both the clinical and pathological aspects of these cases. We are all familiar with the old doctrines, which were presented some years ago, of tuberculosis being primary in the epididymis in all cases, and that genito-urinary tuberculosis, which followed, resulted from an ascending infection. A few men held the view that most cases of genitourinary tuberculosis were primarily in the kidneys, and that the eases where we had extensive involvement were examples of a descending infection from that focus. It has been pretty well demonstrated that there are three common foei of so-called primary tuberculosis of the genitourinary organs. The term primary must be qualified, although we admit the possibility of a true primary tuberculosis of the genito-urinary organs, in the sense that the bacilli may gain entrance into the circulation and, without having first lodged at a point where the primary focus would be developed, they are carried direct to the kidney or to the epididymis. But such a true primary involvement is exceedingly rare. Still we can properly use the term primary involvement in this sense, that in almost all cases of tuberculosis of the genito-urinary organs a bronchial or tracheal gland, or some small lung or bone tuberculosis is the primary focus. From this there is entrance into the circulation of the tubercle bacilli, and then their lodgment, as in the elbow joint, or knee joint, at one or several points of the genito-urinary tracts, and these points are either the kidney, prostate, or epididymis. These are the three common primary foci of tubereulosis of the genito-urinary tract. It must be admitted that such a thing is possible as an ascending tuberculosis from the urethra, just as in a gonorrheal infection. It has been demonstrated in the laboratory that the injection of tubercle bacilli into the urethra is followed by the finding of bacilli after a time in the epididymis. It is maintained by some that tuberculosis can be produced by injecting the urethra

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with tubercle bacilli, producing an ascending inflammation as from Neisser's diplococcus. Clinically, however, such a thing must be rare. I think it possible that with a mixed infection of the gonococcus and tubercle bacilli these cases do occasionally happen; but we must go back to the standpoint, that almost all cases of genito-urinary tuberculosis are through the circulation, secondary to a small primary focus at some point, which is latent or overlooked or overshadowed by the genito-urinary tuberculosis later.

As to frequency, is the epididymis, the prostate, or the kidney the common point of infection? For a long time it was taught that the cpididymis was the common point of infection. I think the majority of the articles which we find in the literature to-day still maintain that view; I mean the point which is almost always involved primarily. But that is certainly erroneous. Later we began to learn that the kidney was very frequently the primary point of infection. Now, we are beginning to learn that the prostate is an exceedingly common primary point; not that prostatic tuberculosis is a great rarity, but that probably it is not very common. So far as the order of frequency is concerned, I believe that the kidney is the most common point of involvement; that the epididymis is second, and the prostate is third.

As to infection of the entire tract, if we have a primary tuberculosis of the kidney it is an easy thing for the ureter to become involved, then the opening of the ureter into the bladder, and later the bladder, and still it is well known that one may have primary tuberculosis of the kidney for years with tubercle bacilli pouring out from the ureter and into the bladder without any bladder involvement. Cases do occur of primary tuberculosis of a kidney where from this common point we have the ureter, the bladder, and sooner or later probably an ascending tuberculosis of the other kidney involved. And that brings up an interesting point, which is of great clinical importance, namely, whereas we used to believe that tuberculosis of the kidney was bilateral, the recent work of Simon, Kronlein, Israel, Mayo, and my own work has shown that tuberculosis of the kidney in more than 90 per cent. of the cases is probably unilateral, and that if the diagnosis is made early the natural result, or the natural conclusion which follows, is that a nephrectomy will frequently clean up the entire picture. Kidney tuberculosis is not very commonly followed by genital tuberculosis, at least not in the majority of cases. It is not a common picture to have primary kidney tuberculosis, with secondary genital tuberculosis. On the other hand, genital tuberculosis leads to involvement of the vas deferens, the seminal vesicles, prostate and bladder. Bladder tuberculosis is exceedingly common, but not as a primary lesion. Primary tuberculosis of the ureter is exceedingly uncommon, as is also primary tuberculosis of the urethra. One point in regard to the factors which may lead to the development of tuberculosis is to be emphasized. Too much cannot be said of its relation to gonorrhea as one of the means of injuring the genito-urinary tract and making points of less resistance, favoring the location of the lesion. It is rather hard to place the urethra in its proper place; that is, whether to classify it in this discussion as a

genital organ or as a urinary organ. As far as the clinical relationship is concerned between true genital tuberculosis and kidney tuberculosis, that is a matter of little moment. As a matter of faet, urethral tuberculosis is almost always secondary to prostatic tuberculosis.

In looking into the symptomatology of tuberculosis of the kidney, first of all, the point should be made that tuberculosis of the kidney very often runs a silent course, without a symptom, without the suspicion of the patient of any serious damage. I say that because several times I have had such an experience as this. Operating, for instance, upon a patient with a distinct, definite history of lesion of the right kidney, the time at which these symptoms developed was noted, and before that the patient believed herself to be in very good general condition. Nephrotomy upon the right kidney showed a large accumulation of pus. From the time the nephrotomy was made, not a drop of urine passed through the bladder. There were no symptoms referable to the opposite side at any time. Within a week the patient died. Postmortem examination showed the opposite kidney, which had never given rise to any symptoms, to be a sausage-like structure, composed of dense fibrous capsule, filled with a caseating mass, without a vestige of kidney tissue. That picture of silent tuberculosis not infrequently oeeurs. The ordinary symptoms are very similar to those which we find in several other conditions, stone, malignant tumor, polycystic degeneration of the kidney, pyelitis, and nephropyelitis from other germ infections. Blood is a common sign; also pus. Pain is common and is of two kinds, eolieky pain, which simulates elosely kidney stone; attacks and rather chronic tenderness and uneasiness, which is sometimes found also in kidney stone; temperature; presence of a swelling, in the advanced eases, where we have a tubercular pyonephrosis or perinephritic process present. In the early history there is no evidence of swelling. In the advanced cases again we have a general picture of tuberculosis, with temperature.

As to the differential diagnosis, we have been able to make it absolute in probably a little more than one-third of our cases by the finding of the bacilli of tuberculosis in the urine.

Here, for instance, is a kidney specimen which shows primary tuberculosis of the kidney, in which we had blood, pus, tenderness, some loss of weight, inability to work, the finding of pus, blood and tubercle bacilli in the urine. Nephrectomy was made, with resulting eure of the process. In the cases, however, in which tubercle bacilli are not found in the urine we must resort to diagnosis by a process of exclusion.

For instance, this is about the method which we have adopted in our clinic: In a ease where we find tubercle bacilli and kidney symptoms, the picture is pretty definite. The presence of bacilli is, however, as stated, only made out in about one-third of our cases; where the presence of bacilli is not determined, the symptoms very frequently can not be differentiated from those of stone in the kidney. Here we employ the use of the x-ray. If the x-ray shows stone, well and good. If the x-ray does not show stone, with this general picture, we believe we have either to do with tuberculosis or hypernephroma. If there is no swelling, no enlargement,

if there is any temperature, we say tuberculosis. If there is enlargement, and no temperature, with the absence of stone, absence of tubercle bacilli, we say probably hypernephroma, so that we must arrive at a diagnosis in a number of cases by this process of exclusion. We have abandoned the tuberculin test as being dangerous and unsatisfactory.

In regard to the treatment of these cases of kidney tuberculosis, I want to refer again to what I regard as probably the most important point that has been brought out by our recent work, and that is, that in fully 90 per cent. of cases the disease is limited to a single kidney. In these the prognosis is excellent if the diagnosis is made early, and the prognosis depends almost entirely upon an intelligent surgical interference. That intelligent surgical interference is not nephrotomy, is not resection of the kidney, but is a nephrectomy, the removal of the kidney upon the involved side. All the early work in this line was largely done by resorting to nephrotomies, with unsatisfactory results. We very seldom have a radical cure of tuberculosis of the kidney from a nephrotomy. Occasionally it does happen, but, as a rule, where a nephrotomy is done a eure results only after a secondary nephrectomy. Resection of the kidneys we have tried in several cases without success. I had one case, in Dr. Billings' service, which I believed until recently was a successful case, where we resected about a third of the kidney in what appeared to be a limited tuberculosis of that organ. The man went to Colorado very much improved; he gained in weight, and only recently he returned to Chicago with a recurrence of the symptoms. He had the old colieky pain; he had five attacks which closely simulated stone. Dr. Kolischer made a very careful examination of the bladder for me. There was a normal bladder. There was distinct evidence of a tuberculous process at the orifiee of the right ureter, which was the side on which we did resection, and there was a perfectly normal ureter on the opposite side; the ureter was catheterized and the urine on the left side was found normal. is a case in which nephrectomy will almost certainly produce a cure. do not know that I can eite a more definite piece of scientifie surgical diagnosis than the work done in this case. I am sure that a nephrectomy would result in a cure, with very little chance of mortality. The mortality from nephrectomies, where one good kidney exists, is not great. Before doing nephrectomy in these cases we make a cryoscopic examination of the blood, and if that examination is -0.55 to -0.57, we do not hesitate to make a nephrectomy. If above —0.60 we hesitate, believing that such a blood state shows kidney insufficiencies and probably involvement of both kidnevs

In connection with nephreetomy for tuberculosis of the kidney, in my own service we have now seven cases in which nephreetomy has apparently resulted in cure. There were some interesting points in connection with one of these, and I want to mention them to show the difficulties of diagnosis. The patient was a girl upon whom I had performed the operation of removal of the appendix. It is one of those eases in which a careful examination with the x-ray to determine presence of stone was not successful. She was treated for an appendicitis out of town, and eame to me with a history of very sharp attacks. A Buffalo physician had the

case in charge and gave an intelligent account of the condition. He advised the removal of the appendix in the interim, after having made a definite diagnosis of appendicitis. I was a little in doubt. I suspected possible kidney stone and had several x-rays made of the case, but could not find stone. I removed the appendix, and within a short time the girl had a return of her old symptoms. While I was away she had a severe attack; they sent for Dr. Ochsner; he took charge of the case; he found kidney involvement, and removed a stone from the kidney. Following the removal of the stone the girl improved very materially. Within a short time, however, the old attacks returned. We then examined her with the x-ray with great care, and again with a negative result. The urine was then earefully examined and in it were found repeatedly tuberclc bacilli. The ureters were catheterized; the left kidney was found to be normal and secreting normal urine. The tubercle bacilli and pus evidently came from the right side. Nephrectomy was made; the tuberculous process was extremely minute; it was difficult to locate any caseating mass at all. There were no giant cells, but there was a round-eell infiltration, and we were unable to determine the presence of tubercle bacilli in the tissue; but the repeated clinical findings of tubercle bacilli in the eatheterized specimens taken with the histological findings, led us without hesitation to make a diagnosis of tuberculosis.

I want to show a number of specimens of kidney tuberculosis which I think are interesting. One specimen which I should like to submit for your examination is tuberculosis of the kidney, with extensive tuberculosis of the bladder. When we come to the consideration of tuberculosis of the bladder, I do not think the problem is as yet solved. My own handling of eases of tuberculosis of the bladder has been exceedingly unsatisfactory. We feel very well satisfied with our handling of cases of primary kidney tuberculosis; but so much can not be said with regard to tuberculosis of the bladder, whether it be tuberculosis of the bladder secondary to a prostatic tuberculosis, or tuberculosis of the bladder secondary to an ascending inflammation from the epididymis. We have drained these cases, with some relief. I believe, however, that the proper treatment of tuberculosis of the bladder is still to be discovered and taught to the profession.

SYPHILIS OF THE MALE GENITO-URINARY ORGANS.*

HENRY G. ANTHONY, M.D.

Professor of Skin and Venereal Diseases, Chicago Policlinic.
CHICAGO.

The discovery of the spirochæta pallida as the probable cause of syphilis, is the most important bacteriological discovery of recent years. Schaudinn, who first detected this micro-organism in syphilis, is neither a clinician or a bacteriologist, but a zoologist; he has not considered human pathology except when he had occasion to study the morphology of

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pathogenic protozoa. The literature of the subject has already attained voluminous proportions, and those who are best able to judge, accept this protozoa as the probable cause of the disease. Etienne Burnet, a preparateur of the Pasteur Institute, in a recent résumé of the subject, says: "The specific character of the spirochæta pallida is a probability which borders on certainty. There still remains the experimental production of the disease by pure culture." We hope that our knowledge of this protozoa will increase to such an extent as to render material aid to the clinic, but at the present time we must still rely on the clinical study of symptoms for our diagnosis of the disease.

The difficulties encountered in the diagnosis of syphilis of the genitourinary organs, are the same as those encountered in the diagnosis of syphilis affecting any organ of the body, namely, it requires a knowledge of syphilis and also a knowledge of the diseases which syphilis may simulate to correctly diagnose a given case. Syphilis is a great imitator of other diseases, and affecting the genito-urinary organs, it may closely

simulate any of the other diseases which affect these organs.

The Chancre:—Physicians are entirely too prone to depend exclusively on the presence of induration in the diagnosis of chancre. They do not sufficiently consider other points, such as outline, color, smoothness of the base, varnished appearance, etc. The clinician should have a regular order of examination in the diagnosis of venereal ulcers. The first point to be considered is outline, which in the chancre is regular. Next, we consider the depth; the chancre in its typical form is an erosion, and not an ulcer. It is surrounded by a collar of induration which elevates the border, and a sore which is superficial, presents the appearance of depth. The base is then to be studied. It is smooth, varnished and red in color. This is what the French call "Chancre en godet a bourrelet dure" and is one of the most characteristic forms. The appearance which it presents should be thoroughly photographed on the mind of everyone. Induration does not appear in a chancre until after the fifth day, and it attains its maximum development after the tenth day. Early induration suggests the diagnosis "gumma."

The Chancroid:—For years it has been recognized that it is at times impossible to make a differential diagnosis of chancre or chancroid. In Paris doubtful cases are admitted to the hospital and secretion taken from the sore is inoculated into the arm of the patient and covered with a watch-glass crystal. If the ulcer is a chancroid a pustule will form in 24 or 48 hours, and microscopical examination will reveal the presence of the Ducrey bacillus. This is a dangerous method and should only be employed on patients confined in hospitals. The base of the pustule should be immediately cauterized. The discovery of the bacillus of Ducrey as the cause of chancroid stimulated many to try to find a culture medium in which the bacillus would grow, and which might be utilized in the clinic. Petersen was the first to obtain a pure culture on agarblood-serum in the proportion of 2:1. From that time, 1893, to date, constant efforts have been made to find a satisfactory culture medium, with varying success. Pure cultures could not be obtained with sufficient

precision to render this means an important diagnostic aid to the clinic. Lipschuetz has published an article giving a résumé of the work done in Finger's service in Vienna, which he states has been of material aid in the clinic.

The first efforts were made with commercial hemoglobin preparations, but without success. The method finally adopted was by making a culture medium composed of one part of blood and two parts of agar. A glass tube is introduced into the carotid of a guinea pig, and the required amount of blood is permitted to flow into each tube successively. Onc animal will furnish sufficient blood for twenty tubes. Tubes so prepared may be kept ten days. The tubes are placed in a thermostat for 24 hours and then their sterility is tested. Water of condensation forms on the surface of the blood agar, and is of itself a good culture medium. In every one of the hundred cases examined he obtained a pure culture. In one case clinically diagnosed a "gumma" he obtained a pure culture and the lesion healed in ten days when treated with a copper salve. a number of cases, vegetating papules of the genitals and perineum which were clinically diagnosed as syphilitic, were shown microscopically to be Ducrey bacillus infections. Rona says that phagedenic chancroid is not a Ducrey bacillus infection, but an independent infectious disease. spirillum is always present in the superficial necrotic tissue, and a bacillus in the deeper structures. Toxic material is absorbed into the circulation and produces symptoms of general infection.

Epithelioma of the Penis:—The diagnosis of a chancre from epithelioma of the penis is at times a matter of difficulty. Cases have been observed of patients with lesions of the penis which have been diagnosed epithelioma, the penis amputated, and shortly afterwards the secondary eruption has appeared. The sudden appearance and rapid development of the lesion should protect the surgeon from this serious blunder. One of the chief difficulties of diagnosis is the fact that epithelioma of the penis is apt to develop in those who have a syphilitic history. Where antiseptic dressings are employed an epithelioma sometimes improves in appearance, and potassium iodid when first administered, may improve the appearance of an epithelioma sufficiently to mislead the clinician into the belief that the lesion present is syphilitic. In all cases I believe that tissue should be excised and examined microscopically before the penis is amputated. The objection to fortifying the clinical diagnosis with the microscopical examination of the tissue is the danger of the operation stimulating the growth of the epithelioma. This rarely happens, and when the excised tissue is quickly examined immediate operation may be resorted to, if the growth increases in size.

Secondary Syphilis:—When lichen planus occurs on the integument of the genitals it is apt to assume the circinate form, in which case it is almost certain to be mistaken for syphilis by the general practitioner. In lichen planus the circle is formed by papules so closely set that they exert mutual compression. They are like a string of beads. The central area is never healthy integument, but exhibits depression, pigment and

atrophy. The syphilide which most closely resembles this, presents a single central papule surrounded by a circular chain of papules. On the mucous membrane of the urethra lichen planus presents the appearance of small, snow-white rectangular bodies arranged in rows and resembling

leucoplakia.

The Papulo-necrotic Tuberculide:—In recent times a great deal of attention has been given to the tuberculides. This is any eruption of the skin which does not show the structure of the tubercle; does not contain the bacillus tuberculosis; will not produce tuberculosis when inoculated into guinea pigs; does not react to Koch's lymph, but which is inevitably associated with tuberculosis of some distant organ. The exact relationship of eruptions of the skin which comply with these postulates to the central focus of disease is still a subject of discussion. The most generally accepted theory is that they are produced by toxins. There are many forms of tuberculides; the form designated as the papulo-necrotic tuberculide, or follicles, is often difficult to distinguish from acne-like eruptions of syphilis. This form of eruption was called "acne necrotica of the extremities" and "acne cachecticorum" twenty years ago.

The advance which has recently been made in our knowledge regarding the pathology of this eruption is, that it has been shown that this affection is not a disease of the sebaceous glands and hence is not a form of acne, but is caused by a phlebitis in the derma. The eruption consists of acne-like papules in various stages of development. The papule is at first deep seated and gradually works toward the surface; when fully developed the papule is capped by a pustule, underlying which there is a central plug of necrotic tissue, the exfoliation of which leaves a pitted variolous-like scar. This eruption may readily be mistaken for syphilis. The genital organs are not the classical seat of the disease, though it may locate there. There is only one case on record (Du Castle's case) in which the disease was limited exclusively to the genital region.

Leucoderma very often affects the scrotum and penis. Some writers have endeavored to show that it is inevitably caused by syphilis. I am convinced that it is due to many causes, one of which is syphilis.

Elephantiasis or chronic edema, caused by syphilis, more frequently affects the face than any other part of the body. It is believed to be due to the formation of fibrous tissue in the derma. It is usually not affected by treatment, but persists as a permanent deformity. Affecting the scrotum, the skin is found to be red and markedly thickened; it does not pit on pressure. The tegumentary folds are obliterated and the scrotum is converted into a distended rigid sae; it is a veritable uniform hypertrophic sclerosis of the organ.

Syphilis of the Testicle:—Syphilis of the testicle in infancy frequently terminates in atrophy. There are two forms of syphilis of the testicle in adult life—selcrosis and gumma. Sclerosis is a hyperplasia of connective tissue which may affect one or both testicles. The organs enlarge to two or three times their normal size; they are very firm and hard; they annoy the patient through their size and weight. Under treatment they subside, but frequently a recurrence occurs if the treatment is discontinued, and after several attacks the condition becomes permanent.

Gumma of the Testicle:—One or both organs may be affected and there may be a single gumma present or a number. It is important to know that traumatism may be the exciting cause. In one of my cases the patient fell down stairs and struck his testicle against the newel post. There is absence of acute inflammation, enlargement of the testicle, usually some fluctuation at a given point, some hydrocele present, and often a history of the wife having repeated miscarriages, together with a history of early syphilitic infection in the patient in some cases. A chronic enlargement of the testicle with a small amount of fluid in the tunica vaginalis, is very suggestive of syphilis.

A young man, 25 years old, had an ulcer of the arm and a disease of both testicles. He consulted a surgeon who diagnosed tuberculosis, and performed double castration. The ulcer of the arm was treated with iodoform. Two months later the patient came under my observation. He stated that the bacillus tuberculosis had been found in excised tissue prior to the operation. The ulcer of the arm was a typical gumma, there was no excuse for calling it tuberculous. Extending along the entire incision, which was still gaping, was a gummatous infiltration. Both wounds healed rapidly under syphilitic treatment. The patient's wife had ulcerating gummata of the leg.

Malignant diseases of the testicle are usually unilateral, nodular, of large size and are apt to acquire adhesions to the scrotum, and the cord is often thickened. Syphilitic affections are smooth, the size is limited, it is often bilateral and there is less pain. Where a gumma is present, the testicle is decidedly lighter than when it is affected by malignant disease.

Syphilis of the Epididymis:—The epididymis alone may be affected by syphilis. In the early months of infection, six or eight nodules may suddenly develop in the upper head of each side. Later in the disease it may assume the form of a simple inflammation with deposits of plastic material and disappear under treatment, leaving fibrous tissue.

Syphilis of the Cord:—Campbell, Goldenberg and others, have reported cases of gumma of the cord. In a case observed by Verneuil the tumor was the size of two fists and diagnosticated as carcinoma. Its specific nature was discovered on postmortem examination. Reclus has reported a case in which the cord was stiff and rigid like a glass rod, and had attained the diameter of a lead pencil. In most of the cases the lesion was an almond-sized tumor, mistaken for a cyst.

Syphilis of the Penis:—A chancre of the meatus produces a ring of cartilaginous hardness surrounding the meatus, which, when seen before the tenth day, can only be detected by palpation. There is no change in the color of the mucous membrane; later, the mucous membrane presents a whitish appearance. It is usually accompanied by a discharge from the urethra containing the gonococcus.

Scleroderma of the Meatus.—A peculiar formation of sclerotic tissue may develop so as to surround the meatus, producing stenosis. When Swinburne showed his case at a meeting of the Society of Dermatology in New York, one member of the society thought it was due to syphilis and others to gonorrhea. Knowledge of the fact that scleroderma may

develop in this location, and the slow development of the lesion, should protect us from error in diagnosis.

Papular Syphilide at the Meatus:—Six or eight syphilitic papules may appear near the meatus in the absence of other lesions of syphilis. I have seen this eruption in congenital syphilis in boys from three to six years of agc. The diagnosis depends on our ability to recognize the syphilitic papule. An ulcerating tubercular syphilide of the head of the penis on healing may produce phimosis. The patient complains of inability to retract the foreskin and he is annoyed by a constant discharge from the preputial sac. Adhesions may be present, or the inner layer of the foreskin may be firmly united to the head of the penis throughout its entire extent, completely obliterating the preputial cul-de-sac. Unless adhesions may be broken up and the foreskin retracted before operation, a circumcision should not be resorted to for the relief of this condition. It is preferable to make a dorsal incision and endeavor to separate the inner layer of the foreskin from the head of the penis, and preserve the outer layer of the foreskin, as it may be required for subsequent plastic operation.

Gumma of the Prepuce:—The most interesting syphilitic lesion of the genital organs is gumma of the prepuce and head of the penis. A gumma, occupying these locations, assumes the form of a plate of cartilage inserted under the skin or mucous membrane. When the foreskin is retracted it becomes inverted like the cartilage of the eyelid. A chancre begins as an abrasion and becomes indurated; a gumma begins as an induration and becomes an ulcer. It often develops at the base of a cluster of herpes, or in association with chancroids and it may follow the application of a caustic. It is almost always diagnosed a chancre. If the nature of the lesion is not quickly recognized and treated vigorously it may produce great destruction of tissue. Where we find tertiary lesions of syphilis on distant parts of the body and a chancre-like induration of the foreskin, we may be sure that the lesion of the foreskin is a gumma, and not a chancre, as we could not have a chancre of the penis with distant tertiary lesions.

Gummatous Infiltration of the Dorsal Lymphatics:—I have observed one case in which there was a neoplastic deposit involving the dorsal lymphatic vessels extending from the head of the penis to the pubis, and occurring late in syphilis. This is not an inflammatory condition, but a nodular neoplastic formation. It quickly disappeared under treatment.

Cylindroid of the Urethra:—This is the rarest of all syphilitic lesions of the genito-urinary organs. The entire urethra is converted into a hard, firm tube, composed of sclerotic tissue, with here and there gummata along its course. It has been mistaken for chronic cordee, chronic gonorrhea, especially where there was a discharge from a gumma, and for cancer. One of Fournier's cases was previously seen by a surgeon who diagnosed carcinoma, and abstained from operation only because of the extent of the disease. Complete recovery occurred under specific treatment. Gummata may form at almost any point in the corpus spongiosum or corpus cavernosum and rupture into the urethra, producing a discharge

from the meatus, or they may rupture externally, producing a fistula. In the presence of a fistula, especially an urethro-perineal fistula, the diagnosis of gumma is to be considered. Syphilitic ulcers of the bladder manifest their presence by hematuria; they can only be diagnosticated by

eystoscopic examination.

Syphilis of the Ureter:—Prokoch has collected all the literature appertaining to this location of syphilis. He says that the most important case is one reported by Hadden in 1886. "The specimen was taken from a man, 55 years old, who died of strangulated inguinal hernia. The right ureter was dilated to twice its normal size down to a point four and a half inches from its entrance into the bladder. Below this point, the ureter was very small and its lower end just admitted the passage of an ordinary probe. The obstructing mass involved the bifurcation of the common iliac artery and both external and internal iliac arteries, with the accompanying veins, were tortuous and puckered from the obstruction of the inflammatory mass which surrounded them. The right kidney was entirely cystic and there were gummata in the liver and spleen." I consider this a case of retroperitoneal gumma compressing the ureter and not a gumma of the ureter. Schlagenhaufer has reported a somewhat similar case.

Syphilis of the Kidney:—Where it was known that nephritis was present at the time of syphilitic infection I have observed an increased rapidity of development of the nephritis, while the syphilis did not run a more malignant course. Where albumen and casts are present in the urine it is many times impossible to determine whether they indicate syphilis of the kidney or nephritis from other causes. The same may be said of postmortem findings; gumma is the only pathologie condition which is clearly indicative of syphilis. Early nephritis may occur in syphilis and entirely recover under treatment, or it may terminate fatally. In tertiary syphilis, gumma may produce a tumor of the kidney, which may lead the surgeon into error in diagnosis. Israel has reported two such cases. One case was that of a man, 39 years old, with syphilitie and malarial antecedents. He complained of continuous pain of the left side with a swelling at the tenth rib. An abseess of the spleen was thought of; an incision made, but only yellowish-white material escaped. The diagnosis of tuberculosis of the kidney was then made, and the organ removed. It was found to be gummatous. Amyloid degeneration, interstitial nephritis and gummata, are observed in the tertiary stage. The urine may contain blood, albumen and easts, or albumen and sugar. Patients with nephritis are best treated by inunctions, they frequently do not tolerate internal medication. The fact that a patient does not tolerate mereury administered internally, has led to the detection of nephritis in some eases. Where nephritie hemorrhage is present it usually disappears under treatment. Albumen may entirely disappear under treatment, or it may diminish to reappear when treatment is discontinued. Where albumen and sugar are both present we have not observed much improvement from treatment. Gummata have been found in the suprarenal capsule.

Syphilis Hereditaria Tarda:—Where ulcers and other lesions of obscure character occur on the genital organs, late hereditary syphilis should be considered as a possibility of diagnosis. It is known that this is more obstinate to treatment than any variety of the disease. Edmond Fournier has reported the following case: A man, 29 years old, entered the hospital with a phagedenic ulcer which had been present eight months and had been treated as a chancroid. It had destroyed the foreskin and most of the head of the penis, exposing the corpus cavernosum and perforating the urethra. He also had exostosis of the temporal bone, a periosteal gumma of the sternum, leukoma of both cornea, remains of chronic ophthalmia of infancy. Hutchinson's teeth, scars in the gluteal region and frontal bosses. His father had been treated for syphilis. The lesion healed promptly under syphilitic treatment.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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MARCH, 1906.

THE STATE SOCIETY. WHAT IS IT?

During the period of reorganization of our county societies much confusion arose regarding the relation of the county to the state society. This confusion still exists in the minds of many, and these, especially if officers of the local societies, should set themselves to the task of once for all mastering this relation. They should secure copies of the constitution and by-laws of both the county and state societies and study them. Formerly each member of a county society paid dues to his county secretary or treasurer, and each member of the state society paid dues to the treasurer of the state society. Under the old plan these were separate and distinct organizations, having only a very loose relationship to each other. Under the reorganization all this is changed. First, we should realize that there is now no such thing as "state society dues." The individual members do not pay dues to the state society any more than a member of the Methodist Church pays dues to the conference. The House of Delegates, composed of representatives from each county society, levies a per capita assessment on the members of the affiliated county societies, and the county society collects a sufficient amount from each member to defray its current expenses and to pay this assessment. Legally and officially, the House of Delegates is the state society, and transacts all its business in just the same way that a Methodist Conference, or a Grand Lodge, transacts the business for the churches or lodges in its district. The state society has no members, excepting as every member of a county society is entitled to vote for a member or members of the House of Delegates. The members of the county society are not members of the House of Delegates (the official state society), but each member is represented in that body, for he has participated in the election of a member of the House of Delegates. Therefore he is expected to, and must, pay his pro rata of the expenses of conducting the business of the organization of the state, which has been authorized by the House of Delegates. This he does in the form of a per capita assessment, which forms part of the dues he pays to the county society. He pays no dues to the "State Society," if by this is meant the annual meeting for scientific and social purposes, for it incurs no expense.

Besides the meeting of the official state society, the House of Delegates, there is also held annually at the same time and place a convention of the members of the various county societies, for which a scientific and social program is prepared by the officers appointed for that purpose. All members of eounty societies are entitled to attend and participate in this program. If we call this convention the "state society," which we do, then there are no "state society dues," for this "state society" incurs no expense except a very small amount for the program of the annual meeting. The reason for ealling prominent attention to this matter is that it seems that there are some who object to paying "state society dues," since they never attend the meetings. They seem to forget that the money is spent for the good of the membership of the whole state. Not one in a hundred Masons or Odd Fellows attends the sessions of the grand body of these organizations, but they do not complain of the per capita tax paid each year for the support of the organization. They know that such a tax is proper and right and for the best interests of all concerned.

It is impossible to get uniform work in our various county societies if the plan of organization is not fully understood and appreciated by each one. The plan is not new. It has been in operation in some states for a hundred years, and is the plan on which churches, secret societies and other organizations have been and are conducted. It has been applied to medical organization for the sake of uniformity. It is a machine, in that it provides opportunities for men to co-operate systematically and effectively, and at the same time it in no way interferes with individuality. It favors rather than retards the full development of the individual. Every member has equal rights and privileges with every other member. It makes the county society the important body, encouraging its growth and usefulness.

After familiarizing ourselves with this plan, cach member should constitute himself a committee of one to see that not only the members of the county society, but every physician in the county fully understands the plans and purposes of the organization. Such a campaign will mean thousands of new members for the county societies in Illinois, and an infinitely better understanding of the word "fraternity."

THE DUTIES OF COUNTY SECRETARIES.

In another column will be found an open letter from Dr. E. W. Weis, Sceretary of the Illinois State Medical Society, addressed to all county secretaries in the state, calling attention to the necessity of an immediate and full report of the membership of each county society. Without doubt, all of our county secretaries will at once respond to Dr. Weis' request. But this serves to call attention to one of the fundamental differences between medical organizations of former times and those of the present day, as well as a corresponding difference in the duties of secretarics. In previous years the principal function of the county society was to hold meetings. These were often well attended and were of great profit to the members. But between meetings there was little manifestation of society life. The principal duty of the county secretary, therefore, was to keep the minutes of the meetings. Membership was obtained by attendance at a meeting and was generally held by continued attendance or lost by nonattendance. If a member by failing to attend several meetings forfeited his standing, he lost nothing else thereby.

To-day, a different condition exists. As shown in the preceding editorial, each county society is an integral part of the state organization. It has certain duties and responsibilities toward the larger organization. Its members have certain rights and privileges, viz., membership in the state society, receipt each month of the Illinois Medical Journal, and eligibility to membership in the American Medical Association. It is hoped that protection against malpractice and damage suits will soon be added to these privileges of membership.

Since each member of each county society, in good standing, is entitled to these privileges, it follows that it is most necessary to be able to determine, at any time, the standing, as a member, of any individual physician in any county in the state. If he is a member in good standing, he is entitled to THE JOURNAL. If he has not paid his full dues, he is not entitled to it. The only way in which this can be regulated, without injustice to the member, on one hand, or to the state organization, on the other, is by having positive and reliable sources of information regarding

each member's standing. This information must come from the county secretary. On him the officers of the state organization must at all times rely to keep them supplied with official information regarding all of the members of his society. Not only during and in relation to meetings of the county society do his duties exist. The secretary is the executive officer of the organization. On his shoulders, more than any other one man, rests the responsibility for success or failure. He should be the most active, energetic, resourceful and accurate man in his society. He will have many duties. These duties will all be important. But no one will be more important than that of promptly and accurately reporting membership changes to the state secretary.

DR. M'CORMACK'S VISIT.

As announced in the February number of the Journal, Dr. H. C. Mitchell, our State President, has made arrangements for Dr. J. N. McCormack, Chairman of the Organization Committee and National Organizer for the American Medical Association, to spend the month of April in Illinois. Dr. McCormack's letter in reply to Dr. Mitchell's invitation, at the request of the Board of Trustees, that he devote the month to work in our state, is as follows:

BOWLING GREEN, KY., Feb. 3, 1906.

Dr. H. C. MITCHELL, President Illinois State Medical Society, Carbondale, Ill.

Dear Doctor:—I find that arrangements have been made for me to work in Tennessee, covering the whole month of February. I could give the month of March to Illinois, but I am under the impression that the condition of the roads is likely to be such as to greatly interfere with the attendance at the meetings. If you think this true, I could arrange to give March to North Carolina, and spend the entire month of April in your state. Be kind enough to write me at Bowling Green, at your earliest convenience, what you think had best be done about the work. Whichever month is selected, you and your Council will have ample time to arrange the itinerary and give the matter some publicity through the A. M. A. and State journals.

In this connection, I would like especially to urge the importance of securing the attendance of laymen at all meetings. The invitation should include senators, representatives, municipal and county officials, the pastors, Bar and Teachers' associations, druggists, W. C. T. U. and other clubs, as well as business men generally. I am discussing the scientific and business affairs of the profession, the "patent medicine" question, and other matters of this kind before popular audiences every day, and I find that it enables me to strengthen the profession with the public in a way that has never seemed possible before.

Asking your advice about these matters at your earliest convenience, and with assurance of personal regard, I am, cordially yours,

J. N. McCormack.

Dr. Mitchell sent out, under date of February 19, the following letter to all county secretaries and general officers of the Illinois State Medical Society:

My Dear Doctor: - Dr. J. N. McCormack, who, as you know, is organizer for the American Medical Association, will devote the entire month of April to this

work in Illinois. He will begin his itinerary in the Ninth Judicial Councilor District, which is located in the extreme Southern end of the State, and will take the districts, according to their geographical arrangement, going from South to North through the State.

In the work of medical organization, Dr. McCormack has no superior in the United States. The work he is doing is of the highest order and includes not only the medical profession, but the laity as well. There is a great demand for this kind of work throughout the entire country, because it brings the profession into closer and more harmonious relations and teaches the physician his duty to his patient, and the patient his duty to his physician. Dr. McCormack invites the general public to all of these meetings and wants all classes of thinking people, such as lawyers, doctors, ministers, farmers, laborers, womens' clubs, temperance organizations, county officials, congressmen, legislators and United States senators.

Dr. McCormack says that often after he has delivered his lecture the physicians in attendance say that it is too bad that the general public could not have been invited, as it would have been just as instructive to them. We hope this mistake will not be made this time, as Dr. McCormack will visit our state only once and if the general public is not invited, it will be too late to rectify the mistake.

Trusting that you will give the matter wide publicity, I am, cordially yours,

H. C. MITCHELL, M.D.,

President Illinois State Medical Society.

Dr. Mitchell has also issued the following open letter to the medical profession of the State:

CARBONDALE, ILL., March 13, 1906.

To the Medical Profession of Illinois—Gentlemen:—At a meeting of the Judicial Council of the State Medical Society in Springfield in January it was decided to invite Dr. J. N. McCormack of Bowling Green, Kentucky, who is chairman of the Committee on Medical Organization of the American Medical Association, to come to Illinois and devote the entire month of April in lecturing to the doctors of Illinois on Medical Organization. The entire expense of this tour is paid by the American Medical Association and will cost us nothing but our time to come out and hear him. The members of the Judicial Council have appointed the places of meeting, as they think, to the very best advantage over their districts. As Dr. McCormack has only a limited time to be with us, it will be impossible for him to reach all the counties in the state.

Dr. McCormack is doing a grand work, and is one of the brainiest men of the nation, and it is earnestly hoped that every doctor in Illinois will avail himself of this rare opportunity, otherwise he will miss a rare treat. He not only wants to talk to the doctors, but to the thinking portion of the laity as well. Consequently it will be in order for you to bring your friends and patrons with you.

We herewith append a copy of letter written by Dr. McCormack to the doctors of Kentucky.

Trusting that the members of the medical profession of Illinois will resolve themselves into a committee of one to push this matter, I am,

Yours most obediently,

H. C. MITCHELL,

President Illinois State Med. Society.

The following letter was sent by Dr. McCormack to physicians of Kentucky in advance of his organization meetings:

Dear Doctor:—At the request of the Council of the State Medical Association it has been arranged that I shall visit as many localities in Kentucky as possible during the month of May, speaking to popular audiences of "Things About Doctors Which Doctors and Other People Ought to Know," of "The Danger to the Public from an Unorganized and Underpaid Medical Profession." I enclose the dates and plan of the trip, and am writing to ask for your personal help and

cooperation in securing the attendance of every doctor and influential layman in your section the day I am to speak in your county, whether you are a member or not yourself. The meeting will be held at the Court House unless otherwise announced.

While my work is all done at the expense of the American Medical Association the meeting is held under the direction of your society, and entirely for the benefit of the individual doctors and people of your county. In order to do you the good intended, it is important that your wife and your influential patrons come out with you. I am going to talk about the business side of medicine, as well as many other things, and will not only advise but convince all laymen present that bad business methods and poverty in the profession are far more dangerous to them than to us. I am trying to expose and remove the popular prejudice against us in the public mind, and to prove that our interests are all uutual, and it is remarkable to see how responsive laymen are everywhere to these appeals when properly put. You can say to them it will not be a dry, technical talk, but one that they will understand and be interested in quite as nuch as the doctors.

The only purpose of my visit is to help you and your people, and I can do nothing for you and your friends unless you are there with them. You can well afford to do this, as I promise to make the day worth more than any month's practice you have ever done. I suggest that you invite lawyers, preachers, teachers, farmers, druggists, business men, and especially ladies.

Asking you to come a little early so that I can have an opportunity to meet

and talk with you before I begin to speak, I am,

Cordially yours,
J. N. McCormack.

The following letter has been sent by Dr. E. W. Weis, Secretary of the Illinois State Medical Society, to all of the county secretaries:

Dear Doctor:—President Mitchell has just written me, enclosing a letter from Dr. McCormack, in which he suggests that he give the month of April to Illinois, instead of some prior time. Dr. McCormack has accepted that month and has made arrangements for meetings as follows: Carbondale, April 2; Mt. Vernon, April 3; Centralia, April 4; Decatur, April 5; Olney, April 6; Newton, April 7.

This brings him to the middle of the state. As this selection of time allows for further consideration and maturing of plans, the president desires you to make all necessary exertion in preparing for these meetings. I enclose herewith a copy of Dr. McCormack's letter, which will outline his work and the kind of audience he desires. Please communicate with Dr. Mitchell regarding your place of meeting and selection of date. These meetings will be announced in the ILLINOIS MEDICAL JOURNAL and should also be thoroughly advertised in the newspapers of your district. Yours very truly,

E. W. Weis, Secretary.

The itinerary for Dr. McCormack as arranged to date is as follows:

District 9—Dr. J. T. McAnally, Councilor. April 2, Carbondale; April 3, Mt. Vernon.

District 7—Dr. E. E. Fyke, Councilor. April 4, Centralia; April 5, Decatur. District 8—Dr. C. Barlow, Councilor. April 6, Olney; April 7, Newton; April 12, Champaign.

District 6—Dr. Carl E. Black, Councilor. April 9, Pittsfield, Quincy; April 10, Mt. Sterling, Virginia, Jacksonville; April 11, Carrolton, Carlinville, Alton.

District 5—Dr. J. W. Smith, Councilor. April 13, Lincoln; April 14, Bloomington.

District 4—Dr. O. B. Will, Councilor. April 16, Galva, Rock Island; April 17, Monmouth, Macomb; April 18, Peoria.

District 2—Dr. W. O. Ensign, Councilor. April 19, Pontiac; April 20, Ottawa; April 21, Sterling.

District 1—Dr. J. H. Stealy, Councilor. April 23, Freeport; April 24, Rockford; April 25, Aurora.

District 3-Dr. M. L. Harris, Councilor. April 26, Joliet; April 27-28, Chicago.

The place of these meetings, as well as other local arrangements, will be announced in the various towns and Councilor districts by letter and through the local press.

The extensive tour recently made by Dr. McCormack through the Northwest and West for the purpose of advancing medical organization is well known to all physicians who have followed the progress of organization work in the last six months. Among the states recently visited by him was the state of Texas, to which he devoted a month. Following Dr. McCormack's visit Dr. I. C. Chase, Secretary of the State Medical Association of Texas, wrote a letter to each of the Councilors of his state, asking them for an expression of opinion regarding the work done by Dr. McCormack in the state and the benefits which accrued thereby to the local organization.

In order that the members of the Illinois State Medical Society may form an adequate idea of the results of this work, the letters of the state councilors of Texas are abstracted:

Dr. M. Smith, Sulphur Springs, Councilor, Fourteenth District:

Since the visit of Dr. McCormack many of the county societies have adopted a different line of study. Many of them are doing very creditable postgraduate work. A large majority of the towns have organized local societies, the idea being to study medicine in all of its branches from a scientific standpoint, to infuse new life and energy into the members. These local societies are not intended to interfere in any way with the county society, but to act as a nucleus. I think Dr. McCormack has done a great work for all classes of medical men and the results will be in evidence for years to come. All those who have heard his lectures were of the unanimous opinion that they will redound to the good of the medical profession.

Dr. S. T. Turner, El Paso, Councilor, First District:

Dr. McCormack only made one address in my district, at El Paso. All felt they were much benefited by his talk.

Dr. T. J. Bennett, Austin, Councilor, Seventh District:

Dr. McCormack caused the profession to begin thinking and then acting. At first the impression made upon many was depressing, but the facts began to take root and then the evolving of ways and means brightened the horizon and real action in the district began. Following his tour through the State, county societies have made out plans for postgraduate work. Bastrop County Medical Society has divided its members and assigned to each one some different subject. Clinical demonstrations are to be a part of each program and a review of each department is required in the course of the year. Williamson County Medical Society and Travis County Medical Society are emphasizing the clinical feature. The most pronounced work is being done by the society as a whole. The proposition is to establish a postgraduate clinic in connection with one of the hospitals in Austin. The demonstrators are to come from any point in the district, or by invitation from elsewhere in the State or outside the State. Programs are to appear as often as the material can be secured, laboratory work is to be continuous, including urinalysis, analysis of stomach contents, bacteriology, etc. The prime motive is scientific advancement with equal privileges to all. The only requirement is membership in the district society. The eleven counties in this district favor the postgraduate clinic idea.

Dr. G. B. Foscuc, Waco, Councilor, Twelth District, writes:

Dr. McCormack's talks have had the best possible influence toward promoting harmony and good will among the physicians of this territory. Several county societies have profited by the suggestions that he made regarding postgraduate work. Johnson County now holds a largely attended meeting each week, in place of the small monthly meetings that they held before Dr. McCormack visited them. Probably the greatest advance in scientific medicine that has ever occurred in Texas was the organization of the Anatomical and Pathological Society at Waco, as the direct result of Dr. McCormack's lecture along this line. This society is now devoting three nights each week to scientific dissection work, under competent anatomical demonstrators. After June I the society will study microscopy under efficient instructors, and work on this line during the warm weather. Great enthusiasm characterizes the meetings.

Dr. D. R. Fly, Amarillo, Councilor, Third District, writes:

The greatest good that Dr. McCormack did was to inject enough stamina into the spinal column of the profession to cause them to demand compensation commensurate with their services, especially from corporations, lodges, etc., and to cause a better feeling of fraternalism in the profession. Our course of study includes presentation and reports of clinical cases, papers and discussions, also quizzes on diseases prevalent in our section of the State. Dr. McCormack's system of holding public meetings is a marvelous success. The securing of the interest of intelligent laymen is a strong factor in settling local animosities among the profession. The intelligent public is quick to grasp the situation and to declare themselves ready to lend their support and co-operation to all legitimate reforms. I have been surprised at the interest and sympathy shown by the thoughtful and progressive laymen.

Dr. Holman Taylor, Marshall, Councilor for the Fifteenth District, writes:

Dr. McCormack's visit was of great value to all who heard him or came in touch with him. The great trouble is that so few heard him. He spoke three times in my district. The doctors who heard his lecture were entertained, instructed, encouraged and enthused. They are better men and better doctors today for having heard him. The laymen of the communities in which he spoke have undoubtedly formed a different opinion of the practice of medicine and those who take part in it, and the new opinion is to our mutual advantage.

Smith County has taken up a course of study along practical lines, with special attention to clinics. Camp County has taken laymen into its organization as honorary members. Bowie County has united with the Miller County (Arkansas) Medical Society for study and investigation, with special attention to clinical work. They meet weekly, at night. Anderson County has taken up the course of study recommended by Dr. McCormack. Cherokee County has taken on new life and is very enthusiastic. Wood County has faken up a special study of sanitation and proposes to educate the laity through the public press.

The above work is being accomplished directly or indirectly, as a result of Dr.

McCormack's work, and I am daily adding to his indirect credit column.

COUNTY SECRETARIES, ATTENTION!

OTTAWA, ILL., March 6, 1906.

To the Secretaries of the Component County Societies of the Illinois State Medical Society:

I am advised by the American Mcdical Association that the forms of the American Medical Directory for the State of Illinois will close April 1. In order to have the names of the members of the Illinois State Medical Society properly entered in the Directory as members, it is necessary that information regarding all members in good standing of all county societies, all removals, suspensions, etc., must be reported to the American Medical Association not later than March 30.

I therefore earnestly request that all secretaries of county societies, whose duty it is to report regarding county society membership, immediately send to me names of any new members, changes or additions, in order that this information may be at once forwarded to the editor of the American Medical Directory for insertion. Unless this information is forwarded me by that time, responsibility for the error or omissions will lie with the county secretary. Very truly yours,

E. W. Weis, Secretary Illinois State Medical Society.

OFFICIAL NOTICE.

There will be daily demonstrations of laboratory methods during the Springfield meeting of the Illinois State Medical Society. Regarding the program, it should be understood that there will be some changes in the order of papers from that furnished Secretary Weis some time ago.

JAS. H. STOWELL, Chairman Section One.

OFFICIAL COMMUNICATION.

RUTLAND, ILL., March 8, 1906.

To Secretaries of Component Medical Societies:

As the various Councilors of the respective districts of the State Medical Society are about to send out, to Secretaries of local medical societies, blanks for their annual reports to Councilors, it is desired to call attention to the following points of importance:

First.—These blanks will be supplied in duplicate and should be so filled out and completed. One of them should then be forwarded to the Councilor of the district and the other preserved among the records of the component society as a basis of future reports and for purposes of later reference and comparison of society data.

Second.—The reports at this time desired are intended to cover the time only, from the date of the close of the reports made in April or May last to Dec. 31, 1905, a period of some seven or eight months. This is done in anticipation of conforming, in the future, to a recent amendment of the law of the State Medical Society requiring its fiscal year to coincide with the calendar year.

Third.—Secretaries are requested to carefully study the page of "General Summary" and to complete it with neatness and accuracy.

Fourth.—As the period for which these reports are to be rendered has already terminated with the year 1905, there can be little cause for delay in promptly preparing and forwarding them to the proper Councilors.

Fifth.—In this connection it is recommended that component societies thoroughly investigate the important subject of "Medical Defense," in order to be prepared, through their respective delegates, to express their desires in the matter, whenever the State Medical Society shall attempt the further consideration and disposition of the question at the forthcoming annual meeting.

WM. O. Ensign, Chairman Council..

IN MEMORIAM.

The following resolutions were adopted by the Effingham County Medical Society, following the death of the President, Dr. Sumner Clark:

RESOLUTIONS OF RESPECT.

WHEREAS, It has pleased the all-wise Father to remove from our midst our elder brother, the President of our Society, and the Nestor of our profession in the county: therefore, be it

Resolved, That we take this method of expressing our sense of loss in the sudden demise of Dr. Sumner Clark, a man of noble attainments in his profession, a pioneer in years, but an able exponent of all that is best in the practice of modern medicine, a student, first and last, possessing an intellect at once alert and comprehensive, and capable of grasping diseased conditions with rare accuracy, and, above all, a citizen and gentleman of unblemished honor and integrity—a man high minded and sympathetic in all his social relations, and bequeathing to us an example of fidelity to his profession and unwavering devotion to duty.

Resolved, That a copy of these resolutions be forwarded to the family of the deceased, with expressions of our condolence and sympathy; and, furthermore, that they be spread upon the records of the Society as a memorial of our appreciation, esteem and work of Dr. Clark.

(Signed)

J. N. Matthews, M.D. C. F. Burkhardt, M.D.

J. B. WALKER, M.D.

Committee.

The above resolutions were adopted by the Effingham County Medical Society, at its regular meeting March 13, 1906.

M. E. KEPNER.

Second Vice-President.

C. F. Burkhardt, Secretary.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY MEDICAL SOCIETY.

The regular meeting of the Adams County Medical Society was held in Quincy at the Elks Club, February 12, with President John A. Koch in the chair. Those present were Drs. Becker, Burch, Christie, Center, Ericson, Fletcher, Koch, Knox, Liesen, Montgomery, Pfeiffer, Rice, Robbins, Rosenthal, Reticker, K. Shawgo, Wessels, G. G. Williams, W. W. Williams, Wells and Zimmerman. The meeting was called to order at 11 a.m. and routine business was transacted until 12, when an adjournment was moved until after luncheon. The afternoon session was occupied by a symposium on pneumonia, the papers of Drs. Koch, Ashton and Reticker being upon the bacteriology, pathology, symptoms and treatment, respectively.

Drs. Robbins, Knox, Center, Zimmerman, Montgomery, Nickerson, Rice and Christie participated in the discussion.

George E. Rosenthal, Scaretary.

CROUPOUS PNEUMONIA: BACTERIOLOGY AND PATHOLOGY.

JOHN A. KOCH, M.D. QUINCY.

We have for consideration to-day a disease that is attracting more interest and attention by the profession than any other, with the possible exception of tuberculosis. Croupous or lobar pneumonia is an acute disease in which a specific parasite invades the air cells of one or more pulmonary lobes, where it grows in a fibrinous medium exuded from the functional capillaries and generates a toxin that infects the system at large. The subject is one of vital importance on account of its frequent occurrence, the fatality attendant upon it, the increase in the number of cases in certain localities and the fact that one attack rather predisposes to another than tending toward immunity. The disease has been known for centuries, and, notwithstanding our acquaintance with its manifestations, it has as yet defied the efforts of clinicians and bacteriologists. Indeed, when the knowledge of the profession is summed up the result is very unsatisfactory. It is not known to a certainty whether pneumonia is a general condition with a local manifestation in the lung or whether it originates in the lung and from this location elaborates the toxins which may become incompatible with life. The essential phenomena of pneumonia, it is now conceded, are due to the action of one or more forms of bacteria. Bacteriologists in general insist that pneumonia is caused by the Diplococcus pneumonia of Fraenkel, also known as the Diplococcus lanceolatus, pneumococcus, etc.

In order to identify an organism as the etiologic factor in a given disease it must pass the requirements formulated so well by Robert Koch. The more thoroughly bacteriologists understand the best methods of investigating the life and habits of the pneumococcus the more positive do they become in asserting it to be the exciting cause of pneumonia. All the requirements of Koch's laws are fulfilled in regard to the diplococcus with the exception of the first, namely, the constant and uniform presence of the organism in the affected tissue. Under the latest methods the germ has been demonstrated in 132 cases out of 145 investigations. As a rule, in the greatest majority of genuine primary pneumonias the diplococcus is found, but in traumatic secondary pneumonias there are also found various bacteria, such as the Bacillus pneumoniæ of Friedlander, streptococci and staphylococci.

The Diplococcus pncumoniæ is a non-motile organism. In the tissue of a pneumonic lung it shows a distinct capsule, while cultivated artificially it is without one. The culture media must be alkaline and consist of agar, blood serum or bouillon, but a growth will not result under 70° F., while a temperature of 95° is better. The life of the pneumococcus in moist sputum is of considerable duration,

the average period being less than two weeks unless exposed to direct sunlight. Under ordinary conditions this sputum dries in the course of a few hours or days, and the dried masses retain their virulence for a long time and, becoming powdered, distribute the pneumococci in the air. In sunlight or in diffuse daylight the bacteria in such powder die within an hour. The diplococcus is stained with the usual diluted alcoholic coloring solutions. In conditions secondary to pneumonia the pneumococcus is also found, such as pleuritis, pericarditis, peritonitis, meningitis, endocarditis, arthritic affections, etc. Independently of pneumonia it can be demonstrated in otitis media, epidemic cerebrospinal meningitis, etc.

The germ is invariably discovered in enormous numbers in the exudate contained in the alveoli, and, notwithstanding it is believed to be the exciting cause of pneumonia, it is found to remain indefinitely in many healthy noses, mouths, throats and lungs without inducing the disease. It is still a mystery under what conditions the diplococcus receives added virulence to start a pneumonic process. By some it is argued that the organism going below the glottis into the deepest air passages induces the disease. It may also enter the air cell through the circulation and lymphatics. The diplococcus in the air cell excites an irritation in the delicate structure that separates the interior of the cell from the functional blood supply derived from the pulmonary vessels. An exudation from the functional vessels follows, and the coccus at once finds itself surrounded by a medium suitable for its multiplication. The conditions as to temperature, etc., are similar to those in artificial cultures in the laboratory. The microbes increase rapidly, more exudate is poured into the cell, where the process is repeated, cell after cell and lobule after lobule being invaded. All this time the cell wall is nourished by its nutrient blood supply from the bronchial vessels, and is almost as indifferent to what is going on in the space which it incloses as is the glass of the culture tube to the process within it.

From the moment that the culture process begins, the specific toxin also begins to be formed, and is at once absorded into the circulation. From this we have the chill, the high temperature, the prostration and all other evidences of a virulent infection. The rapidity with which the toxic products finds its way into the system is due to the favorable conditions presented by the great vascularity of the lung and the enormous surface from which absorption takes place. So long as fresh supplies of toxin are being formed-or, in other words, so long as the consolidation is spreading—so long the toxemia will be maintained. But here, again, as in artificial cultures, there is a limit beyond which the process can not extend. A given quantity of a culture medium can maintain the life of a given number of germs only for a certain time. Beyond that time the changes produced in the medium render it unfit as a soil for the further growth of the organisms, and the death of the latter puts an end to the process. With the supply of toxin cut off, the temperature falls. If the invasion has been regular and rapid, coming to an abrupt termination with the complete consolidation of the lobe, the supply of the toxin will cease abruptly and we shall have defervescence by crisis. If, on the other hand, the effusion into the air cells has been gradual, and the process of consolidation slowly carried forward, the supply of toxin will continue in one part while it fails in another; the process will be prolonged and the defervescence will be by lysis. It is also believed by many that an antitoxin is formed in the system that causes the crisis, but no satisfactory results have been obtained in a sufficient number of cases to warrant the use of a pneumococcus serum.

To Laennec, the inventor of the stethoscope and the discoverer of auscultation, we are indebted for the foundation of the conception of pneumonia upon a correct anatomical and clinical basis. He differentiated three well-defined and easily-noted stages of the disease: engorgement, hepatization and purulent infiltration. Pathologically the appearance of the lung may be classed into four stages; engorgement, red hepatization, gray hepatization and purulent infiltration. In the stage of engorgement the lung tissue is deep red in color, firmer to the touch and more solid, and on section the surface is bathed with blood and serum. It still erepitates, though not so distinctly as healthy lung, and incised portions float. The air cells can be dilated by insufflation from the bronchus. Microscopic examina-

tion shows the capillary vessels to be greatly distended, the alycolar epithelium swollen and the air cells occupied by variable numbers of blood corpuscles and detached alveolar cells. The lung tissue, in the stage of red hepatization, is solid, firm and airless. If the entire lobe is involved it looks voluminous and shows indentations of the ribs. On section, the surface is dry, reddish-brown in color, and has lost the deeply congested appearance of the first stage. One of the most remarkable features is the friability, a hepatized organ can be readily broken by the finger. Careful inspection shows that the surface is distinctly granular, the granulations representing fibrinous plugs filling the air cells. On scraping the surface with a knife, a reddish viscid serum is removed, containing small granular masses. The smaller bronchi often contain fibrinous plugs. If the lung has been removed before the heart, it is not uncommon to find solid molds of clot filling the blood vessels. Microscopically, the air cells are seen to be occupied by coagulated fibrin, in the meshes of which are red blood corpuscles, polynuclear leucocytes and alveolar epithelium. The alveolar walls are infiltrated and leucocytes are seen in the interlobular tissues. Cover-glass preparations from the exudate and thin sections show, as a rule, the diplococci, many of which are contained within cells. Staphylococci and streptococci, as already mentioned, may also be seen in some cases. In the stage of gray hepatization, the tissues have changed from a reddish-brown to a gravish-white color. The surface is moister, the exudate obtained on scraping is more turbid, the granules in the acini are less distinct, and the lung tissue is still more friable. Histologically, in gray hepatization, it is seen that the air cells are densely filled with leucocytes, the fibrin network and the red blood corpuscles have disappeared. The fourth stage, purulent infiltration, is a more advanced condition of gray hepatization. The lung tissue is soft and the surface is thickly coated with a thin purulent covering. The stage of gray hepatization appears to be the first step in the process of resolution, and, in the fourth stage, the tissue has finally reached the highest grade of softening, the cell elements are disintegrated and rendered capable of absorption.

In more than half of the cases the right lung is affected, especially the lower lobe; it is rare, however, to have a pneumonic condition in the upper lobes alone. As a rule, the unaffected portion of the lung is congested or edematous. The pleural surface of the inflamed portion is invariably involved when the

process becomes superficial.

Complications of pneumonia are really expressions of the pneumococcus infection in other organs or tissues. We may see the following complications: Pleurisy, endocarditis, meningitis, nephritis, arthritis, phlebitis, colitis, peritonitis, otitis, parotitis, conjunctivitis and general mucous membrane infection. In the lung itself abscesses or gangrene may occur. The mortality in pneumonia ranges from 20 to 40 per cent. in hospitals and from 10 to 30 per cent. in private practice. It varies greatly, however, in different years. In the two extremes of life, it is high, the lowest percentage being between the ages of 10 and 25. The death rate may also be materially increased on account of alcoholism, exposure, traumatism, old age and the inhalation of deleterious gases. Pneumonia appears to be more fatal in southern climates. The causes of death in pneumonia in healthy subjects are usually due either to the simultaneous infection of other organs, as the moninges, the endocardium, myocardium and pericardium, the plcura and other structures with the pneumococcus; or a toxemia, the degree of which does not depend alone on the extent of lung involved or of any structure invaded, but on the virility of the infection and the condition of the patient. A pneumococcus septicemia is induced. The toxemia is indicated by nervous symptoms, as in the typhoid state, by progressive cardiac weakness, and by diarrhea and meteorism. Heart failure may be induced by this toxemia or by overdistension of the right heart. Recent investigations have shown that death occurs in practically all cases where the pneumococci enter the eirculation and when a diminution of the white blood corpuscles occurs. Death from mechanical interference with respiration is very rare.

SYMPTOMS OF PNEUMONIA.

L. B. ASHTON, M.D. QUINCY.

Hippocrates defined pneumonia as "a rapidly fatal disease characterized by sputa of various colors." We can now draw the lines somewhat more closely and consider the various phases and degrees in its symptomatology under two general heads, the lobar form and the lobular form, or bronchopneumonia. Lobar pneumonia under its several names we now understand to be a specific fever, having its principal lesion confined to the lungs and their pleural coverings. The organism once having invaded the system, however, travels widely and may be far-reaching in its destructive action on other tissues. In noting at the bedside the symptomcomplex, one is impressed by the regularity with which the symptoms present themselves as manifestations of the various pathologic changes observed in the laboratory, now so classically defined, keeping pace directly with the progress of the systematic and local infection. This is the form common to young adult and middle life, and presents in these a fairly clear clinical picture. The lesion is usually unilateral, with the right lower lobe as its favorite seat. Probably it is very shortly after the general invasion has occurred that the initial chill is felt, this being evidently toxic in origin, all the subjective and objective symptoms following quickly in its train. These are a sense of oppression and pain in the chest; anxiety, as indicated by the troubled expression and active mind; a bounding, angry pulse; hurried breathing, with the alæ nasi dilating at each inspiration, followed by an expiratory grunt. The cheeks are suffused almost to a dusky hue, the eyes are bright, the skin dry and burning hot. It may also be noted that one cheek is more deeply colored than the other, often pointing the affected side fairly accurately at a glance. Herpes labialis appears quite early from the nervous and vasomotor disturbance induced. The tongue is furred, the urine scant and dark in color, showing by a chemical analysis an absence of chlorids. Their early return may be taken as a favorable sign. The bowels are usually constipated; the sputum, at first catarrhal for a short time, soon becomes more viscid and blood stained, assuming a chocolate hue, the so-called prune-juice sputum, which, in itself, may be taken as almost pathognomonic of this disease. The temperature is high from the beginning, continuing so until the crisis, which usually occurs on from the fifth to the ninth day, occasionally even at an earlier date. A return of high fever after the crisis, a pseudo-crisis, is rather unfavorable.

An early examination of the chest reveals a halting form of respiration; fine crepitations are heard over the congested lobe, similar in character to the sound produced by rubbing one's hair between thumb and finger. Soon the normal rustle of the vesicles is obscured by the harsher broncho-vesicular and bronchial breathing, incident to alteration in the sound-conducting quality of the lung tissue, the result of advancing consolidation. This change is further evidenced by the sharp quality of the tactile fremitus detected over this area. Motion is restricted or in abeyance on this side. Percussion demonstrates the resonance over the affected lobe to be changed in pitch, while a sense of increased resistance is imparted to the examining finger; the notes elicited shading out, as the changes within the lung structure succeed each other, to relative or absolute flatness, modified somewhat by the location of the focus, whether superficial or deep. Compensatory hyper-resonance is heard over the adjacent and opposite lobes. Nervous symptoms, ranging from a mild delirium to a profound typhoid state, may develop, particularly in alcoholic subjects. A blood examination shows a decided leucocytosis. Radiographic observations might also be called into service, if added evidence were desired, to indicate the shape and extent of the consolidation. Following the crisis, these findings begin to disappear in reversed order, and with this a new feature is added; moist, coarse râles are now discovered—the râles redux of the old authors-while the sputum is soon altered to a muco-purulent condition and is more freely expectorated; these changes in turn gradually grow less marked until the normal respiratory murmur is again restored.

Lobular pneumonia, or broncho pneumonia, while differing in its etiology and

pathology, has some points in common with the lobar form in its clinical manifestations, with several distinguishing features. This disease is most frequently met with in the two extremes of life and appears to be more local than general in character. It is frequently bi-lateral and irregular in its distribution, the foei being found in patches or islands throughout the lungs. In children it may be primary, though is often secondary to some infectious fever. It may develop insidiously, or, not infrequently, be ushered in by an attack of vomiting or a convulsion. To this is added languor, restlessness and quickened respiration, with the phenomena of dilating nares already mentioned; a suppressed occasional cough; irregular fever; skin dry and hot, or else bathed in perspiration; the cheeks may also show a bright flush or be alternately flushed and pale. In older children, thoracic or abdominal pain may be complained of, the latter anomaly being a not infrequent source of error in diagnosis, the observer directing his attention to the abdomen entirely, to the neglect of the thorax. Pain in this locality is explained by the fact that the lower intercostal nerves have their peripheral distribution over the diaphragm and abdominal wall, and these refer pleural irritation to their superficial branches. Inflammation of the abdominal viscera may generally be excluded by the fact that deep pressure will elicit but little increased tenderness. The cough soon becomes more irritable, causing the child to cry by its persistency. On auscultating the chest the same hesitating pause at the end of each inspiration is detected, swelling into a moan or short grunt on expiration. Sibilant and fine crepitant râles are widely scattered. Expectoration in infants is absent, probably swallowed; in older children it is muco-purulent. The pulse is quick, but relatively small. Pereussion affords so little added information because of the natural resilience of the undeveloped ehest as to make it a needless and irritating part of one's routine in examination. Nervous symptoms may complicate the disease from an early date. The temperature, after running an irregular course for from one to three or five weeks, finally falls by lysis, leaving the little patient utterly exhausted, with convalescence slow in returning.

As a clinical entity this form of pneumonia may be said to occupy the middle ground between the asthenic type seen in the aged and the sthenic lobar variety of vigorous adults. Broneho pneumonia in the aged usually assumes so marked a difference in the character of the symptoms developed to those in children as to warrant its description as a sub-class of this disease, and the adoption of the generic name of senile pneumonia as being more restricted and suggestive. Perhaps the most constant early symptom of this disease is prostration, the patient showing a disposition to take to bed without apparent cause. If to this is added anxiety, some fever, or, perhaps, a copious perspiration, a slight futile cough and an expiratory grunt, the existence of this process is highly probable. The temperature varies; it may be high, moderate, normal or subnormal. Nervous symptoms of a more or less severe grade are common. Moist, bubbling râles are heard all over the chest, bronchial breathing is present, while a suspicious pause is noted following each inspiration. Hypostatic congestion in the posterior portions of both lungs makes the auscultation and percussion findings more frank here than elsewhere; the eough is not a prominent symptom and may be absent, the sensory nerves being so blunted as to take no note of any irritation. The expectoration, when present, is muco-purulent, tenacious as glue and expelled with difficulty, more often not raised at all, the alveoli becoming filled with a collection of this, mixed with the débris of cellular elements, which sooner or later must overwhelm the patient from its toxic effect or drown him in his own secretions. The resisting force of his tissues now becomes so depressed as to make the prognosis a gloomy one, the scene usually closing by the patient sinking into a comatose state with the development of mucous rattles in the throat. These latter, while they may precede death from one to three days, in my experience always portend a fatal issue.

TREATMENT OF PNEUMONIA.

JOHN K. RETICKER, M.D.

QUINCY.

When a diagnosis of pneumonia has been made, a trained nurse should be placed in charge of the patient, if circumstances will permit. A light, well-venttilated room should be selected. An abundance of fresh air should be insisted upon and the temperature kept between 65° and 70° F. I have often experienced much trouble in obtaining the fresh air and correct temperature for the pneumonia patient, as the laity fear the patient will catch cold. At the onset, when the pleuritic pain is at its height, hot or cold application may be used to relieve pain. Strapping the chest often answers the purpose. Occasionally we will have to resort to a hypodermatic injection of morphin. The various kaolin preparations are often applied to the chest, but I believe an absorbent-cotton jacket is just as good and is worn with much more comfort by the patient. If the fever is high enough to demand special treatment, a cold pack to the forehead and cool alcohol baths will usually suffice. All depressing antipyritics should be avoided. I most always begin medical treatment by a thorough course of calomel, followed by a saline. If the cough is distressing and the sputum scanty, I usually prescribe a mixture containing syrup Dovers and ammonium carbonate. The ammonium overcomes what little depression we would get from the Dovers and, I believe, aids expectoration. I begin giving carbonate of creasote early in 15-drop doses every three hours and have come to place much confidence in it. It is antiseptic, antipyretic and expectorant. I have yet to see the first case in which the fever ended by crisis when creasote was begun early.

The important item in the treatment of pneumonia is to support the patient. The heart now has an extra amount of work to do and is also weakened as the result of toxemia. An examination should be made each day. So long as both heart sounds are distinct the patient's condition is satisfactory, but if sounds are indistinct, pulse rapid and weak, respiration rapid and patient pale and bathed in perspiration, the heart is flagging. In combating this condition I rely chiefly upon strychnin and whisky, although digitalis, strophanthus and nitroglycerin are valuable drugs and often used. Large doses of strychnin and whisky should be used if occasion demands. I have given 1/15 grain of strychnin, followed by 1/20 every three hours until results were obtained. Venesection is recommended to relieve the blood pressure when the patient is robust, with flushed face and rapid, noisy breathing. I have never practiced venesection, but I would if relief could be obtained in no other way. The sputum should be collected in some suitable receptacle and burned. The mouth should be cleansed several times a day with some good antiseptic solution.

The diet should be light—one which will not cause dyspnea by distention of the stomach and enfeeble the heart by overtaxing the digestive powers. Milk, if well borne, may be used as an exclusive diet, or whey, meat juice, broth and egg albumin may be given. Cold drinks are acceptable and beneficial, as they promote the action of the kidneys and so help to eliminate the accumulating poison. The serum treatment of pneumonia has not come into general use because there has been little evidence of its real value.

CHAMPAIGN COUNTY MEDICAL SOCIETY.

The Champaign County Medical Society held its regular meeting in the parlors of the Hotel Beardsley, Champaign, February 15, 2:30 p.m. Dr. Ellen Miner read a paper on whooping-cough. Dr. John Martin read a paper on colds. Both papers were well prepared and the discussion that followed was principally on Dr. Martin's paper. The following members were present and took part in the discussion: Cushing, C. F. Newcomb, Hess, Burns, Yantis, Wall, Lyons, Johnson, Mandeville, Shuetz, Powers, Craig, Gulick, Collins, A. L. Collins, Foelsch, Miner and Martin. The usual business was transacted and the society adjourned until next regular meeting in April.

C. M. Craig, President.

C. D. Gulick, Secretary.

CHICAGO MEDICAL SOCIETY.

Regular meeting, Jan. 10, 1906, Dr. Carl Beck in the chair. Dr. F. C. Hotz presented a patient showing the permaneut result of his operation for eetropium of the lower eyelid.

OPERATION FOR ECTROPIUM OF THE LOWER EYELID. F. C. Hotz, M.D.

CHICAGO.

This lady kindly consented to come before the society to give me an opportunity of showing the remote permanent result of an operation for ectropium of the lower eyelid, which essentially differs from the operations that have been and still are usually performed. I would suggest that the members take a look at the patient first, so that we will not retain her too long, while I make a few remarks as to the history of the ease. At the time of the Iroquois Theater fire in this eity this patient escaped with her life, but with the left side of the face badly burned. The result was complete eversion of the lower lid, due to the eightricial contraction of the facial skin. In the spring of 1904 an attempt was made by some one to relieve the ectropium by partially uniting the lid margins at the external canthus and putting grafts upon the wound after dissecting the lid up. This operation was a complete failure, as you can see by the picture which I will pass around, showing the condition when the patient came to me in December, 1904. You see the union of the lid margins plainly by a sharp black line. The operation I performed was done on the 17th of January, 1904, so that sufficient time has elapsed to make sure that the result is permanent. This result, which is certainly as perfect as we can desire, was obtained by a mode of operating founded upon the anatomic conditions of the Lormal lid. In other words, I strove to restore the anatomic conditions of the normal lid.

There are two points of great importance in this regard. The first is that the normal lid skin is very thin, adapting itself to the configuration of the lid and following all the slight movements of the orbicularis muscle, by which the facial expressions are changed. You notice in this case when the lady smiles the lower lid of the left eye moves up just as easily as the lower lid of the right eye. The second point is that the lid skin is well demarcated against the skin of the cheek along the infraorbital border and fastened to the border, so that the heavy mass of the cheek ean not pull the lid down. You can push the cheek up, but you can not by any traction upon the skin of the cheek disturb materially the position of the lid. But put your finger above the infraorbital margin and the slightest traction upon the skin will cause an eversion of the lid.

To select the proper material for the destroyed lid skin is an important point, and the cicatricial skin found in the neighborhood of the lid after these burns (and the majority of cases of ectropium of this kind is the result of extensive burns) is admirably suited for our purpose, and I avail myself of it in every ease that I can. I outline a large flap in that cicatricial skin below the everted lid margin. I begin the incision near the nasal end of the lid, pass the knife down and slightly obliquely, turn it around in the cheek and pass it up toward the temporal end of the lid. As this cicatricial skin contracts considerably when it is dissected out, the flap, of course, must be taken of liberal dimensions to be large enough to cover the lid. It is dissected up toward the lid margin, then the cieatricial bands and strands underneath which hold the lid everted are cut, and in fact excised, until the lid can be moved up into its position. You have then a large semilunar flap connected with the lid margin. The convex border of this flap is then fastened to the orbital fascia, just above the infraorbital margin, by fine silk sutures, closely inserted, so as to insure a perfect union of the flap margin with the fascia; and in order to prevent any wrinkling of this flap during the first stage of healing I put two ligatures through the lid margin, stretch the lid margin up so that it actually is bent convexly upward, and hold it in that position by the ligatures which are fastened to the forehead with plaster strips. The resulting wound below is then covered with a Thiersch graft. I take one graft for the whole wound. With a good razor and a little practice it is not difficult to cut a proper

graft of the proper size from inside of the arm to cover this whole wound area. The flap is carried on the razor from the arm to the wound, dumped down and spread out uniformly, so that its edges overlap the edges of the wound. No sutures are necessary. The whole is then covered with rubber protective and gauze compresses wrung out of warm boric acid, and on top of that another protective is applied to keep it damp, and over this a layer of cotton to insure proper warmth. The whole dressing is secured by a bandage. The union of this flap covering the lid insures the patient absolutely against recurrence of the ectropium. The margin will not be displaced, even if the whole Thiersch graft should not take, even if you allow the whole wound below the lid flaps to cicatrize, because the traction of the shrinking scar acts upon the lower margin of the lid flap, which is securely fastened to the orbital fascia and can not be pulled down because the fascia is attached to the bone. No traction of this scar can move the tissues of the lid, and consequently can not exert any traction upon the lid proper. That is one of the greatest advantages of this operation. The second point is that we have a thin covering of the lid, which is as close to that of the normal lid as we can get it, and will look like the skin of the other lid. The configurations of the lid are restored a nicely as possible and even the movements of the lid are restored for proper facial expression. As to the Thiersch graft, I want to call attention to it because at a former meeting of this society great stress was laid upon the fact that the Thiersch grafts shrink so much that they are complete failures in the operation for ectropium. They have been failures, it is true; and they had been a failure in the former operation in this case. The Thiersch grafts shrank, and they will shrink if you let them, but if they have no chance to contract they will not do so. In this case a graft was put on this wound, one edge of which was fastened at the infraorbital margin, while the other edge of the wound has very little mobility because it is the rigid scar tissue of the cheek. You see, if that graft wants to shrink it is resisted by the margins of the wound. It can not and did not shrink much. But if the operation is cone in the old fashion, if instead of outlining this flap the incision is made just along the lid margin, the lid margin is dissected up to be put in its proper position, and then this wound from the lid margin to the cheek is covered with Thiersch grafts, it is no wonder that these grafts shrink a good deal, because the movable lid margin can not offer any resistance. The cheek here is the resistant part; the flap is united with this and with the free border of the lid, and traction of the shrinking flap is exerted entirely upon that movable border and naturally will pull it down; the inevitable result is the return of the ectropium. That is not the fault of the grafts, but the fault of the method of operating.

In conclusion let me say that this is not an exceptional result, but that I have obtained the same success in a number of other cases operated on by this method—a method which I can conscientiously recommend to you as far superior to the old flap operations.

Dr. Emil Ries showed a patient with exophthalmic goiter who had been materially benefited by the use of thyroidectin.

EXOPHTHALMIC GOITER TREATED WITH THYROIDECTIN.

Dr. Emil Ries.

CHICAGO.

In January of last year this patient was brought to me from a distant town on a stretcher. She was unable to walk any distance. She was greatly emaciated. She had exophthalmos and Graefe's sign, a pulse of 112 to 120 and a goiter. She was salivated; she vomited; she looked sallow, and she was sent to me for operation. The patient weighed at that time seventy-three pounds. She was put on thyroidectin, which only a short time before had been recommended, and which you know is the blood of the thyroidectomized goat. She took as much as she could take. She was put to bed and took the thyroidectin for nearly a month. During the first month under thyroidectin she gained twelve pounds. Her pulse went down to about 96. The salivation disappeared completely. Her color improved somewhat.

Her goiter did not shrink very much. Exophthalmos was slightly less, but her general condition improved considerably. She could take food. The patient continued to take thyroideetin off and on until September of last year, but since then she has not had any. She now weighs 141 pounds, a gain of almost seventy pounds. She has received no other medication except this. Her pulse, when I examined her two days ago, was 120. The goiter has shrunk eonsiderably and the exophthalmos is not at all marked now. She can eat, as you may gather from the fact that she has gained seventy pounds. She does not vomit any more. She is not salivated. Menstruation had been absent for a considerable time before she came to me, and she did not menstruate until some time in the summer of 1905. But for the last three months she has menstruated regularly without any local treatment. I simply show this ease as an example of what thyroideetin may do. It may be interesting to know that a sister of hers also has exophthalmie goiter, as I have been told by the family physician, and she has had the insanity of Graves' disease. Her sister has never taken thyroideetin to any extent. She started it, continued to take it for two or three days, but as she disliked the taste of it she discontinued its use. The most important feature in this ease is the remarkable improvement in the patient's general condition.

Dr. William L. Ballenger:—I would like to ask Dr. Ries as to the method of

administering the thyroideetin, the dosage, etc.

Dr. Ries:—It is administered by the mouth in doses of 15 grains a day and increasing to 60 grains a day. It is given in capsules. The 60 grains a day would be divided into three doses.

Dr. A. H. Andrews: - Has she been given any mereury?

Dr. Ries:-No.

Dr. Thomas L. Gilmer showed a patient, illustrating the treatment of fractures of the mandible.

TREATMENT OF FRACTURES OF THE MANDIBLE.

THOMAS L. GILMER, M.D., D.D.S. CHICAGO.

In the treatment of fractures of most of the bones, universal splints, plasterof-paris splints or adhesive or other bandages may be employed with good results following. In the treatment of fractures of the mandible none of these methods give the best results and in some fractures of the lower jaw they are quite inadequate, especially in multiple fractures. Fractures of the mandible are generally compound and unless the two ends of the broken bone are nicely adjusted, the secretions find their way in between the fractured ends with infection following. This nice adjustment can not be obtained by the use of bandages whether they are of the ordinary or plaster kind. The simplest method which will completely immobilize the fragments is the wiring the teeth of the mandible to those of the upper jaw, making a splint of the teeth of the upper jaw. Indeed, this is the only rational method of treatment of fractures of the mandible other than wiring through the bone, which is rarely ealled for, when the line of break is in the body of the bone posterior to the teeth or in the ramus. The only objection to this method is due to the fact that the mouth can not be opened, but this objection is of minor consideration since there is always sufficient space between the teeth to permit feeding with liquid diet. The teeth should not be secured in this manner until the stomach has been emptied of solid food as there would be danger in ease of emesis, but the setting of the bone need not be done until digestion has taken place. This method is not difficult and may be employed by any physician moderately skillful in the use of instruments. German silver or phosphor bronze wire may be employed, as each has great tensile strength and is pliable and not likely to twist off in its adaptation to the teeth at their neeks. I introduced this method in 1886 and I and others have employed it with great satisfaetion in many eases.

In fractures of the mandible, when there are two or more teeth posterior to the break, the ideal method of treatment is one I am presenting in a case tonight for your consideration. It is a method by which the fragments are completely immobilized and rigidly held so. By this method the patient is able to open and close the mouth and masticate soft food. This is a method of splinting far superior to the interdental splint. An impression is taken of the teeth of the mandible, a plaster cast is made from this. It is then sawed in two on the line or lines of fracture if there is displacement, which is usually the case. The cast is then reconstructed and a splint formed on this, either of vulcantte or German silver. The teeth are now dried and the splint is cemented onto the teeth, using the cement employed by dentists for setting crowns and bridges. This is a modified form of a splint introduced many years ago by the late Dr. W. W. Allport of this city, later employed by Mr. Christopher Heath of London, but had passed into disuse until recent years from lack of a suitable cement material to secure it to the teeth.

This young man was attacked by thugs on the 24th of December last and struck a blow with the fist, breaking the mandible between the central and lateral incisors. On December 27th I took the impression, reconstructed the cast and formed the German silver splint which he now wears. The splint was applied on the 28th. Upon examination you will find the fragments of the jaw held immovable and he has the free use of the jaw.

Dr. Frank Allport read a paper on "The Indications for the So-Called Radical Mastoid Operation," which was discussed by Drs. Norval H. Pierce, Henry Gradle, J. Holinger, William L. Ballenger, Thomas J. Gallaher, Otto J. Stein, Bayard Holmes, Joseph C. Beck, F. C. Hotz, and the discussion closed by Dr. Allport.

INDICATIONS FOR THE SO-CALLED RADICAL MASTOID OPERATION.

FRANK ALLPORT, M.D.

Professor of Clinical Ophthalmology and Otology, Northwestern University Medical School, Etc. CHICAGO.

The so-called radical mastoid operation is a natural evolution from the ordinary mastoid operation and is almost exclusively used for the permanent cure of chronic purulent otorrhea. It was noticed that a discharging ear generally became cured after a mastoid operation, and from this observation sprang the conception of thoroughly divesting the temporal bone of all pathologic accumulations through the pathways of the mastoid process and meatus. This was first called the "Stacke operation," from Professor Stacke, who proposed entering the antrum from the middle ear and meatus. Professor Schwartze then proposed entering the middle ear and meatus from the antrum, and it was then called the "Stacke-Schwartze" operation. From this the term "radical mastoid operation" was evolved, and thus it is known to-day, and easily takes its place as one of the most complicated and important of the great modern surgical procedures. It is but rarely used in acute mastoid abscesses and should only be then undertaken in case of unusual tympanic necrosis, where brain complications are suspected, and perhaps not even then. Generally speaking, it should only be used in the event of intractable chronic purulent otorrhea, and this inevitably opens the discussion as to what interpretation should be placed upon the word "intractable." This expression is susceptible of many meanings, according to the personal equation and experiences of various observers, extending all the way from the ultraconservative optimist, who abhors operations, is never willing to admit the intractability of a discharge and is content to go on treating, syringing, scraping and powdering an ear for years, to the surgeon who considers a discharge chronic intractable after it has existed a month or six weeks and then advises immediate operation. The writer recognized the fact that it is quite impossible to lay down any hard-and-fast rules as to the length of time an aural discharge may be allowed to continue unmolested by surgical intervention. Speaking in a general way, however, he believes that when an ear has discharged for about six months, during which time faithful and proper treatment has been carried on, the surgeon may justly consider that the time has arrived for proposing some sort of operative intervention. The writer desires to say, however, that, of course, he would

not consider it advisable to await such a period in case the discharge was of a streptococcus character, or if reasonably well-defined symptoms occurred pointing to serious intramastoid or intracranial complications, as the latter conditions would naturally demand immediate operative advice, and an unabating streptococcus discharge should not be allowed to continue for long without an opening of the mastoid cells. In suggesting a six months' probationary period the writer is guided by his own and others' experiences to the belief that if a discharge can not be eliminated in about that length of time it is generally uscless to look for a cure by non-operative methods. Such discharges generally persist because the disease has passed backward into the mastoid antrum, which is, of course, a true anatomic and physiologic portion of the middle ear proper, and can not possibly be otherwise considered. In the event of such progression it is manifestly illogical to expect curative results when the remedial procedures and remedies do not at all reach the remote seat of pathologic lesion. Of what use is it, then, to go on cleansing such tympani, either by dry or wet processes, to continue the use of tympanic curettage and powder insufflations, when the moment the middle car is thoroughly cleansed a continuous outpouring of fresh discharge from the antrum nullifies all the well-intentioned efforts of the surgeon? Is it not more logical to endeavor to regard necrosis in this location in the same light as necrosis is regarded in all other portions of the body by the general surgeon, and to seek its removal by rational procedures? This reasoning is strengthened by the peculiarly important structures adjacent to the seat of disease, making necrosis in this location a condition of exceptional gravity, even though concealed and difficult of access. It may be said that operative advice is particularly applicable in case tuberculosis or syphilis is present, if the discharge continues excessively foul and is mixed with cheesy, mother-of-pearl-colored or cholesteatomatous flakes, if granulations persist and are accompanied with posterior and superior caries of the tympanum, if the discharge is of a streptococcus character, if mastoid or brain symptoms are present, if the drum-head opening is insufficient for drainage and is located in the upper portion of the membrane, and if there is reddened sagging of the upper, posterior and inner portions of the auditory meatus. The perpetual cleansing, scraping and powdering method of dealing with chronic purulent otorrhea still in vogue with some aurists reminds one very forcibly of the gynecology of the "good old days," when the gynecologist's waiting room was lined with an expectant crowd of women waiting for their turn to have one of the magical mixtures of iodin, glycerin, tannin, silver or what-not applied to the interior of their uteri. In the light of our present-day knowledge we know that these never ending "treatments" fell far short of arriving at the cause of the trouble; they merely directed their energies at the effect, at the discharge or the inflammation, etc. The real origin of the disease lay within the pelvis, where it is reached and cured today by operation by the modern surgeon. In case an apparently uncomplicated and intractable chronic purulent otorrhea has existed for about six months, in spite of competent and persistent treatment, the writer is willing to admit that an ossiculectomy and tympanic curettage may, perhaps, be advised as the next step toward a cure, although good results can only be reasonably expected in those few cases where the sites of necrotic and other pathologic changes have absolutely restricted themselves to the confines of the tympanic cavity. This admission is conceded in the face of the fact that only a small minority of such operations are successful, and that brain complications and facial palsy sometimes follow the operation. The writer believes, however, that this procedure, followed by faithful treatment for a few weeks, will, by the removal of pathologic products from the middle ear and the production of improved drainage, cure a few of these cases, and he believes that patients may properly be given the benefit of this possibility, unless intramastoid disease is evident, before resorting to more serious, dangerous and expensive operative methods. The failure of this procedure, after a reasonable length of time, opens the way to the emphatic and conscientious advice for the performance of the radical mastoid operation, the chief objection to which is the production of facial paralysis (an accident which should seldom, if ever, occur after the operation of acute mastoid abscess), and this is a menace of no mean

caliber and one from which the average operator may well shrink. It is a most distressing sight for a surgeon to see a face pulled to one side after anesthetic unconsciousness has passed away, and to realize that this is the work of his own hands. If this disheartening appearance is shocking in an obscure hospital patient with few or no friends, and little or no influence, what must it be to witness such an occurrence amid wealthy and influential surroundings, where the bad tidings will spread like wildfire, to the undoubted detriment of the operator's reputation? It may be said, however, for the encouragement of operators who are doing this character of work, that these cases almost invariably recover in a few weeks or months, and those cases which do not recover may often be successfully operated by the attachment of the facial nerve to the hypoglossal or spinal accessory nerves, as recommended and successfully practiced by Ballance and others.

The facial nerve may be injured in any portion of its course, from its entrance into the middle ear at the upper middle portion of the tympanic wall to its exit from the skull at the stylomastoid foramen. Contrary to popular belief, the facial nerve always remains within the confines of the petrous portion of the temporal bone and does not enter the mastoid protuberance at all. On chiseling away the mastoid cells the hard petrous covering of the nerve may be clearly seen at the anterior portion of the cell structure, just back of the bony meatus and below the floor of the antrum, and should be carefully avoided, although considerable protection is afforded by its sclerotic casing. The shell of bone protecting the nerve as it passes through the tympanum is, on the contrary, very thin, and sometimes entirely absent in spaces, thus accounting for the occurrence of facial paralysis during middle-ear suppurations. Most cases of facial paralysis following mastoid operations are due not to injury of the nerve after it leaves the tympanum on its way to the stylomastoid foramen, where it is protected by its petrous covering, but to the breaking of the walls of the tympanic Fallopian eanal by probing, chiseling or curetting, an accident which may occur to the most painstaking operator, especially where openings of the canal, either of a necrotic or congenital nature, are present. Indeed, facial paralysis is said to occur from the mere jarring of the nerve during chiseling proceedings, an opinion which argues in favor of gentle manipulations, a soft head cushion and more familiarity with reliable rongeurs and curettes instead of the chisel for the bone work. Another place at which the facial nerve may be injured by careless or thoughtless operating is near the tip of the mastoid bone, as the nerve passes down through the stylomastoid foramen into the soft tissues of the neck. Some operators are overbold, as they use the strong eurved scissors in cutting away the sternocleidomastoid and other attachments to facilitate the free opening of the tip cells later on in the operation. They may, unless careful, carry the curved scissors too far beneath the mastoid apex and sever the tissues of the cervical portion of the facial nerve.

Another danger to be avoided during the radical mastoid operation is the infliction of an injury to the horizontal semi-circular canal. At the extreme upper and posterior portion of the inner wall of the tympanum, between the facial nerve and foramen ovale anteriorly, and the mastoid antrum posteriorly, can be seen the hard, bony convexity covering the horizontal semi-circular canal, usually easily recognized as a vellowish prominence in the inner tympanic wall. Being situated just at the floor of the angle, where the antrum merges into the aditus ad antrum, injury to this portion of the internal ear may be easily inflicted by a blow of the chisel, especially after the superior posterior wall of the bony meatus has been cut away in the performance of the radical operation. Nevertheless, it would seem that this accident rarely occurs, as not many instances of disturbances of equilibrium and dizziness are recorded after such surgical procedures, symptoms which assuredly would be expected after injury to these centers of equilibrium, and symptoms which, fortunately, as a rule pass away in a few days. A partial explanation of the infrequency of injury to the facial nerve on its downward course, and of a similar infrequency of injury to the horizontal semi-circular canal during the radical operation, resides not only in their hard and compact coverings, which protect them from accidents, and to the eye of the operator distinguishes them from their bony surroundings, but also in the fact that they lie

below the plane of proper chiseling procedures, as in cutting away the posterior meatal wall, while the initial opening should be wide the receding space should gradually diminish in size as the inner wall of the tympanum is approached. Thus the space produced should be triangular in shape, with the apex at the inner wall of the tympanum and the base at the opening of the bony meatus. By thus carefully chiseling, both the descending portion of the facial nerve and the convexity of the horizontal semi-circular canal will lie outside the lines of incision and escape injury. Both these vulnerable anatomic points may, perhaps, be avoided by the use of the Stacke protector as the last few pieces of bone are removed to make the triangular space or opening necessary for the careful inspection and treatment of the middle ear, antrum, etc. The protector may also be used in chipping away the ledge of bone separating the attic from the meatus, without which procedure a perfect cure is highly improbable. It should not be forgotten, however, that the introduction and retention of the footplate of the protector may in itself injure the facial nerve and semi-circular canal unless carefully introduced and used, and that the same thing may occur from undue force in malleting the chisel onto the footplate of the protector through an undue sense of security. Owing to these and other objections, the protector is not used as much as formerly, reliance being placed on better surgical knowledge and technic and intense and constant illumination of the operative field. The writer has derived much satisfaction from the use of the instrument which he submits for your examination, to break down the meatal wall and protect the facial nerve, semi-circular canal, etc., from damage. The footplate of the instrument is carefully inserted through the antrum (after it has been freely opened) into the middle ear, and the crusher is applied to the external edge of the meatus, being careful to lift the footplate from the inner tympanic wall to prevent accidents. A portion of the posterior meatal wall should be chiseled away before this instrument is applied, as the bone is too thick and strong to be safely broken unless previously weakened by a few strokes of the chisel and mallet. After the wall is thus ruptured clear through to the middle ear, and the pathway distinctly outlined, the rest of the operation can be completed with much greater safety and facility. The wounding of the sigmoid portion of the lateral sinus is undoubtedly one of the dangers of the radical mastoid operation, although the writer believes that this danger has been very much overestimated, both as to its probability and also as to the damage accomplished by such an accident. The knee of the sinus usually lies about one inch back of the posterior wall of the meatus, except in children and people of small heads, when its proximity is nearer. It may lie further backward or further forward, even to the extent of impinging close upon the meatal wall and absolutely preventing the performance of the classical mastoid operation. Vascular connections exist between the sinus and the cells, thus affording at least one explanation as to the frequency of sinus infections. The outer osseous covering of the sinus is easily broken and care should be exercised to prevent this accident during operative procedures, still no especial anxiety need be felt if this occurs, although the subsequent operative steps are always thereby somewhat embarrassed, through constant vigilance, lest the dural covering be also ruptured. Even, however, should this occur, the prompt use of tampons will almost always control the hemorrhage, and the danger of infection is not great. The writer believes that the danger is not so much in damaging the sigmoid sinus as in the improper handling of cases where phlebitis and thrombosis are discovered, and as these conditions are generally to be found (if found at all) in cases of acute or subacute mastoiditis, or in acute exacerbations of chronic mastoiditis and otorrhea, where the operation is clearly indicated as a life-saving measure, it need not be considered at the present time.

Another danger in the radical mastoid operation is the possibility of exposing the dural covering of the temporosphenoidal lobe or the cerebellar lobe of the brain, and here it may also be said that in the opinion of the writer this danger has been much overestimated, and that but little anxiety need be entertained with good operators even if such accidents occur. There is, of course, some danger in opening up an avenue of infection through the foramen ovale, in case of the accidental removal of the stapes during the extraction of the malleus and incus, or

in middle-car curettement, or in entering the carotid artery in front and beneath the middle car, or the jugular fossa directly underneath the tympanum, by too vigorous operative measures, but these accidents, especially the two latter, are of extremely improbable occurrence and should not enter into our calculations in estimating the advisability of an operation. While, unerefore, meningitis and other intracranial complications, and accidents to the facial nerve, horizontal semicircular canal, sigmoid sinus, etc., may result from the performance of the radical mastoid operation, the only occurrence that seems to the writer to sustain much weight is the embarrassing and unfortunate occurrence of facial paralysis. This is surely a valid objection and one that demands consideration, but the only suggestion that can be offered by the writer is not to neglect or abandon this truly admirable operation, but to perfect our skill, knowledge, precautions and surgical teehnic so that this and other accidents and misfortunes will not occur. So far as danger to life is concerned in a properly executed radical operation for the cure of chronic purulent otorrhea, when no dangerous symptoms are present, the writer believes that such an occurrence, while, of course, possible, is extremely improbable and has never seen it in his own practice.

Another objection to the operation is the fact that the ultimate result is not always successful as to the cessation of the discharge. Such results, after passing through the dangers of the operation, the protracted healing and the considerable expense, are not reassuring, and naturally discourages both the operator and the patient. Unsatisfactory issues of this nature are, however, in the opinion of the writer, practically always unnecessary and due to improper and insufficient operative procedures, such as lack of care in the extermination of every particle of necrosed bone, the non-use of plastic or skin-grafting operations, or insufficient curettement of the Eustachian tube opening, which should be thoroughly scraped, cleansed and, if possible, sealed, as its office after this operation is lost and its orificial patency only serves to perpetuate a discharge. The failure to remove the upper ledge of bone between the meatus and tympanic attic is also frequently the cause of imperfect healing, as when operative measures cease the upper meatal wall should be perfectly continuous with the upper attic wall, or the tegmen tympani, so that a bent probe touching the tegmen tympani can be pulled (still touching the bone) completely out of the meatus without meeting any bony obstruction. Unless this most important step is taken and the attic destroyed as a separate entity, the diseased territory can not be perfectly curetted, cleansed and treated, and will always remain a focus of disease.

Another objection which is frequently raised is the possible bad effect upon hearing. While this result, with a properly executed operation, is a possibility. the writer believes its magnitude has been very greatly overestimated and that a vast majority of cases will either emerge from the operation with uninjured or improved hearing. We have long since passed the time when the drumhead and ossicles can be regarded as essential to hearing. No doubt when in a reasonably healthy condition they are a great assistance to the best hearing, but the writer believes that many people could hear much better without drumhead or ossicles. For instance, the writer believes that a perforated drumhcad, embarrassed by tympanic adhesions and accompanied by necrosed and retracted ossicles, surrounded by fungating granulation tissue, so far from assisting hearing, actually impedes the transmission of sound waves to the labyrinth, and that the hearing of the individual will, in all probability, be improved by a removal of this obstructing pathologic mass. Such are the conditions usually found to a greater or less extent in cases of ehronic purulent otorrhea, and form the basis for the cheerful prognosis of fair hearing capacity after the operation, and the results in the writer's cases and in the cases of most other surgeons fully corroborate the foregoing statements. When surgeons drained the wound, both through the meatus and the unsutured mastoid opening, a forceful objection to the operation could be found in the extremely protracted healing, and in the resulting deformity, consisting in an unsightly meatal opening, a lowered and protruding auricle, a disgusting postauricular scar and often in a large and permanent mastoid aperture. As the operation is at present performed, however, the mastoid wound is entirely

sutured at the time of operation, thus preventing a postaurienlar opening, and, by holding the parts up and in place, dispensing with the malposed auricle. A properly made Panse, Körner, Ballance or other meatal flap does not deform the meatal opening and assists greatly in the rapid lining of the operative cavity with new skin, and when this is eombined with the grafting of skin sections to the exposed bone, as recommended by Ballance, Dench and others, little is left to be desired tending toward a perfect and satisfactory result. Patients can usually leave the hospital in about two weeks, and a thorough cure is generally effected in from eight to ten weeks.

From the foregoing answers to some of the important objections to the radical mastoid operation it will be seen that a great and favorable evolution of improved operative technic has taken place through the last few years and that the operation is gradually losing its terrors and disadvantages, and that continuous, honest surgical work and investigation will soon quiet our fears by placing this operation in such a position of safety and assurance that its performance can not be avoided by those pretending to do the best and most advanced aural surgery. The foregoing portion of this paper has been devoted largely to a recitation of the operative indications, the principal objections to the radical mastoid operation, an attempt at answering these objections and a few words of inspiration toward future work and investigation. I can not leave the subject, however, without briefly reminding my hearers that purulent tympanic infections are responsible for about one-half of the brain abscesses of the world and that in the United States alone 4,000 otitic brain abscesses occur annually, that chronic purulent otorrhea is responsible for most of these and that death from this cause occurs in about one to every thousand ear cases of all kinds that come under treatment. With an array of figures like these we must inevitably recognize the importance of the subject, and we can not and should not seek to evade surgical responsibility if chronic purulent otorrhea is producing this significant mortality. Hundreds of cases of chronic purulent otorrhea present themselves to us to be cured. Shall we be satisfied, with these statistics before us, with eternally, month after month and year after year, cleansing, drying, powdering, scraping these middle ears, when we must know that the real scat of the discase can, as a rule, never be even touched except by the radical operation? Shall we shirk operative responsibility or enhanced labor? Or shall we not rather by study, investigation and operative experience so perfect our knowledge, precautions and operative technic that this great surgical procedure may be performed with practically no danger to life and but little danger to function, thus enabling us to perform our legitimate part in lessening the world's mortality? These questions must be settled by each of us according to our personal equations.

DISCUSSION.

Dr. William Ballenger, in discussing Dr. Allport's paper, laid down the following axioms on mastoid disease: 1. Acute infection of the mastoid cells is serious in proportion to virulence of the micro-organism causing it. 2. Chronic infection of the mastoid cells is serious in proportion to virulence of the original (acute) microbic disease that lapsed into the chronic form. Hence chronic infections of scarlatinal and influenzal origin are more grave than those of less virulent origin. 3. A marginal perforation of the drumhead is of more scrious import than a central perforation. 4. A marginal perforation usually signifies bone necrosis in the parts near the perforation. 5. The anatomic parts in proximity to the postsuperior margin of the drumhead are the incus, the antrum, facial nerve, horizontal semi-circular canal and the middle fossa of the skull. 6. Hence a perforation is serious in proportion to its proximity to the postsuperior portion of the margin of the drumhead. 7. The anatomic parts in close proximity to the superior margin (Schrapnell's membrane) of the drumhead are the malleus, root of the attic and the meninges and brain resting upon it. 8. Hence a perforation in the superior margin of the drumhead signifies probable necrosis of the malleus and roof of the attie, with an impending meningitis or cerebral absects. 9. The anatomic parts in close proximity to the inferior margin of the drumhead are the thick bony wall of the floor of the middle ear, and in rare cases when the floor is thin the jugular bulb. 10. A perforation in the inferior margin of the drumhead is, therefore, of comparatively little gravity, except in those rare cases in which the jugular bulb is separated from the floor by only a thin bony partition. 11. A central perforation in the anterosuperior quadrant of the drumhead signifies an infection of the Eustachian tube. A mastoid operation in a case with the perforation at this point should include the appropriate treatment of the infective salpingitis. 12. The indications for the radical mastoid operation in chronic infections of the mastoid cells are urgent in proportion to the marginal location of the perforation (especially in the postsuperior region), the virulence of the original infection, the presence of necrotic bones and in the secretions and the history of recurrent acute exacerbations. 13. It goes without saying that intracranial complications of otitic origin are imperative indications for the radical operation. 14. The study of a given case with chronic ear discharge by the standard of the foregoing axiomatic statements should lead us to a correct conclusion as to the necessity for the radical mastoid operation.

Dr. Norval H. Pierce: -Mr. President, Dr. Allport has made a worthy attempt to clear up the most important question in this very important subject, namely, the indications for the performance of the radical operation. We might say that he has gone over the same old ground that has been threshed over and over again without adding very much more to our knowledge, but this is because he can not transcend human knowledge. It is exceedingly difficult in any given case of chronic otorrhea, where there are no other symptoms besides a discharge from the ear, to say whether that ear is a menace to the patient's life or not. I might say that it is impossible to foretell without the actual symptoms of sepsis, or meningeal irritation or of some other obvious symptom whether or not the disease within the mastoid bone is progressing toward one or the other of the vital parts which surround the tympanic cavity. Therefore I have come to the conclusion that the only indication for the radical operation is a running ear which resists all conservative measures, and that is about as far as we have gotten at the present time. But, to go back, I notice that Dr. Allport has apparently indulged in a very common misapprehension regarding the Stacke operation. The Stacke operation was devised by the gentleman after whom it was named for two principal purposes: 1, an exploratory purpose, and, 2, for the purpose of obviating the danger of wounding the sigmoid sinus when it lies very far anterior or very close to the external auditory canal. It is also used in cases where, after penetrating the bone from the surface to a certain distance, the antrum, on account of its malposition or for some other reason, is not found, and then the Stacke operation is performed. The Stacke operation is performed in the following manner: The usual incision is made posteriorly, the external auditory canal is removed, and then by means of Stacke's chisel, which is a curved chisel, the walls of the aditus ad antrum and the walls of the cpitympanic space are removed, after examining the contents of the middle ear and finding whether there is necrosis of the ossicles or not. If the ossicles are necrosed they are removed and a probe is pushed up into the aditus ad antrum and into the antrum to find whether there is a large space there surrounded by necrotic bone. If this is true, the opening at the depth of the canal is increased in size, and if it is found that drainage can be accomplished by taking away the end of the bony canal the moveable or cartilaginous portion of the external canal is replaced, the posterior auricular incision is sutured and the operation is completed. That is the typical Stacke operation. The Schwartze operation, however, goes in from the exterior of the bone and endeavors to arrive at the antrum from the exterior, and in this way the antrum, the mastoid cells if they are found necrotic, the epitympanic space, the tympanic cavity and the external auditory canal arc converted into one great cavity. In going in from the surface the Stacke procedure is used when we suddenly come upon an unexpected sigmoid sinus which lies close to the external bony canal, or where we are unable to find the antrum by way of the external opening. I find this misapprehension is very common, and I mention it simply to bring the matter before Dr. Allport in his closing remarks. As regards the pathology of chronic suppuration, Dr. Allport mentions a chronic streptococcus suppuration as a cause of a chronic ear trouble.

I believe that there is no such a thing as a chronic suppurative inflammation due, per se, to the streptococcus. Nearly all of these inflammations are due to necrosis or caries or to cholesteatoma, which in turn is largely due to the retention of fatty masses derived from cpithelioma within the catchbasin produced by the original necrosis within the mastoid cells. If we can by corrective treatment destroy these cholesteatomatous masses and provide drainage, ventilation, we will in all probability effect a cure just as we would bring about a cure by our radical methods.

Now we come to the question that is most important, and that is, which cases that have not the symptoms I have named, which point to the extension of the disease to the brain, to the sigmoid sinus or to necrosis of the semi-eircular eanals or eochlea signs of retention (pain), etc., can we say must be operated, and which are the cases in which we may allow suppuration to go along? I am free to eonfess that I find this a most difficult matter to determine. I have seen cases, ten, twelve, eighteen years ago, that had perforations in Schrappell's membrane, with little shreds of eholesteatoma coming out and discharge taking place, which to-day are as healthy as they were at the time I saw them first. On the other hand I have seen cases where there has been little or no discharge, where there has been great loss of the tympanie membrane going on for years, and then suddenly a chill, a high fever, followed by death from septie thrombosis of the sigmoid sinus. These represent the two pietures of the extreme eases. In between there are various shades of eases. The only thing we can say is, if we wish to be on the safe side, the best advice to our patients with suppurative ears that resist all our conservative efforts to heal them (under this head I comprise all intratympanie manipulations and operations), to submit to the radical operation. I think that is just the whole thing in a nutshell. Facial paralysis is the greatest bugbear in this matter, perhaps because it affects most the surgeon. The eases in which we wound the meninges and the patients die of meningitis, or where we perforate the sigmoid sinus and the patient dies of sepsis, affect us very little, as a matter of fact. These things happen in the natural course of events and the patients are passed on to their fathers and little is thought of them. But when a patient eomes into our office day after day with that awful facial expression and goes around to his neighbors and they ask, "Who did it?" "Dr. ——!" it is a terrible thing, really, and therefore I agree with Dr. Allport when he said that facial paralysis is a great hindrance to the universal employment of this radical operation. I differ from the essayist, however, in that I believe facial paralysis, which may exist for months, may occur not from cutting the nerve, but from a concussion of the nerve. I am eonvineed of this. I have seen patients who had facial paralysis and in whose cases I am positive the nerve was not eut nor the eanalis Fallopii fractured. They get well-most of them. As I said the other evening, when there is a permanent facial paralysis I believe we are placing too much reliance on our ability to reestablish facial movement by suturing the facial nerve to any other nerve. I have seen some of this work done in New York, and it has been disappointing. It is a great mistake to attempt these operations within a year or two after the occurrenee of such facial paralysis. I have recently seen a patient on whom I operated something like six years ago, the operation having been followed by a complete facial paralysis, and which remained so for three or four years afterward, and at that time I advised the suturing of the nerve to some other nerve. The other day that patient, a child, at puberty, came into my office, and to my great surprise she had lost the distortion of the face which she had and there was some movement of the paralyzed museles. How that has eome about I am not prepared to say, but, nevertheless, the fact remains.

Dr. Henry Gradle:—The so-called radical operation represents, no doubt, the greatest advance in otology in the last fifteen or eighteen years. There are annually thousands of lives saved by it, but it is a grave and formidable operation and one that requires a great deal of technical skill in its performance. It is an operation not free from danger. I do not refer merely to the wounding of the facial nerve, or the semi-circular canal, but to the danger to life. Statistics of mortality of this operation vary some; it is in the vicinity of 4 to 8 per cent. It is true this mortality is not so much from the operation as from the disease, be-

cause cases are operated too late. But even in the hands of expert operators there is some mortality, hence we should strictly lay down the proper indications for it and not do it unnecessarily. When a patient with chronic otorrhea of recent or long standing comes with a history of an acute or subacute exacerbation, with onesided headache, with local tenderness, with no symptoms of meningeal or cerebral irritation, there is no question but that it is a case for immediate operation. The disease in such an instance is progressive and dangerous. But in the absence of such urgent symptoms the operation should not be undertaken without critical trial of conservative treatment. After many years' experience I have learned to recognize the persistence of the odor of the discharge as a very valuable guide regarding the necessity for the operation. How long the disease has existed is by itself of no importance. When we remove the secretion by thorough syringing and then blow into the ear a light puff of boric acid we will suppress the odor completely in one or at most two or three sittings in a fair proportion of cases. These cases generally get well rapidly in the course of a few days or few weeks under the persistence of this treatment, so that an operation is entirely unnecessary and should not be considered. It is true, we do not get them all well so fast. In a small proportion of these cases the discharge may persist very long, but without the least evidence of danger. These cases are evidently due to disease in the neighborhood of the Eustachian end of the tympanic cavity; they are not due to any bone lesion, and, while a small proportion of them do not get cured rapidly, they all get well in the end and are certainly of the harmless variety. When we can remove the odor by one to three irrigations, followed by boric acid, operation is out of the question. When we can not remove the odor by this treatment, promptly, its continuance proves useless, no matter whether it is kept up for a few days or weeks. There are lesions present which cause a damming up of pus and retention, and these are the dangerous cases. By various other means we can often render the source of suppuration more accessible even in this relatively intractable class of cases and thus avoid operation in a large proportion of them. By the use of intratympanic tubes we can occasionally remove grumous thickened pus and immediately stop the fetid odor. While we do not succeed often in doing this, we succeed often enough to make it worthy of trial. Sometimes by using ether and alcohol poured into the ear, followed by carbolated glycerin, we may also succeed and be rewarded by a cessation of the odor. If these methods fail, the treatment introduced by Dr. Pierce has in my hands proven satisfactory, namely, thorough tamponing with absorbent gauze, by putting the gauze into the middle ear itself and replacing it at short intervals. In this way a certain proportion of these cases are thoroughly and permanently cured. Gauze drainage does not remove the odor at once or promptly. It stops the secretion gradually, and when the secretion is gone there is no odor left. But the last drop of pus on the gauze may still smell offensively. If the gauze-drainage method proves of no influence upon the amount of discharge after two or three weeks of trial, the case can not be cured except by operation. If you find a decided improvement you may continue its application and you will find one of two results: either in the course of five or six, rarely more than seven, weeks the discharge has disappeared entirely, there is no odor left after the gauze has been taken out dry one or two consecutive times, and the patient is cured, or we get just so far, we can remove the odor, reduce the discharge to a mere trace. Of the cases cured by gauze drainage, a fair proportion stays cured. But the number of relapses is much larger than in the class in which the odor is speedily stopped by irrigation and boric acid. But even a radical operation is no absolute guarantee against a relapse. Only such relapses are not dangerous to life after thorough operation. The really difficult decision whether to operate or not is in those instances in which gauze drainage removes the odor but does not dry up the discharge completely. Whether such a patient is in greater danger from his persisting disease or from the operation depends on his willingness to take care of himself and circumstances and surroundings.

Dr. Thomas J. Gallaher, of Denver, Colo.:—I did not expect to be called upon to take part in this discussion. I would say in regard to operating upon a given case of chronic otorrhea, I would perform the radical mastoid operation when I

had exhausted every other known means. Many eases of limited destruction of the tympanum and attic, and including the ossieles, will respond to careful treatment when the radical operation seems to be the only procedure which offers relief. Such treatment includes thorough cleansing of the parts, drainage, use of stimulating powders, removal of granulations and cholesteatomatous cases, and even ossiculectomy itself. If after such care we fail to decidedly improve the discharge after many months' or a year's treatment, the radical operation must be seriously considered. In deciding for or against the operation, proper attention must be given the social position of the patient and whether one or both ears are involved. We should not hesitate to perform the radical operation if the patient has one sound ear. Flushing of the middle ear, as ordinarily done, does not thoroughly clean the attic, and it is necessary to use the attic syringe. The Schwartze-Stacke operation is, in this country, taking more and more the place of ossiculectomy, as in the vast majority of cases the aditus is involved. The operation as first deseribed by Stacke, namely, entering the antrum through the posterior-superior meatal wall, is now seldom performed, owing to danger of injury to the facial nerve and dislocating the stapes, but the Schwartze-Stacke operation is more commonly done; that is, opening the antrum, proceeding through the aditus into the attic. I am pleased to know that Dr. Allport does not especially recommend the use of the guide in the aditus, lest it might do damage. Much harm is undoubtedly done in operating for acute mastoiditis by the indiscrete probing in the aditus, thereby dislocating the incus and stapes. I would have been glad to have heard more in regard to the after-treatment of these cases. Of course, with cholesteatomatous formation the posterior wound is kept open. There is very little liability to the drooping of the ear if the auricle is sutured to the temporal muscle. This enables us to inspect the cavity at all times and makes it easy to remove the eholesteatoma in case of its reforming. In addition the air keeps the parts dry, lessening the liability of its recurrence. It is a question whether skin grafting. after the formation of granulations upon the bone, materially assists in the epi-The greatest care should be used in removing the dermization of the cavity. posterio-superior portion of the annulus tympanicus, lest by too strong a blow upon the chisel the aqueductus Fallopii might be fractured, thereby injuring the facial nerve. In the radical operation the tympanic end of the Eustachian tube should be obliterated. This can be done by means of a curette, and some operators use a small hand burr placed upon right-angled handle. The burr should be very cautiously used, and just one or two turns made by the hand will be sufficient to enter the tube. This will insure the removal of diseased parts in the tube and its permanent closure. If the Eustachian tube is not thoroughly closed the middle ear is reinfected secondary to acute rhino-pharyngitis. The mere exposure of the sinus or the dura will do no harm if proper precautions are taken. However, it is a serious thing to penetrate the sinus or dura, lest infection might result. It is a source of congratulation among otologists that through one means or another many cases of chronic suppurative otitis media are now being cured which formerely continued a menace to the patient's life, as well as being a very great inconvenience to him.

Dr. Otto J. Stein:—This subject is of great interest to all who are particularly interested in otology, but as the hour is late I shall not attempt to discuss the topic. I will content myself with asking a question or two. I would like to ask Dr. Allport if he has found in his experience that we may have necrosis of the labyrinthine wall of the middle ear unassociated with any active process apparently elsewhere. In cases where we have had prolonged suppuration, chronic otorrhea, there may have been great destruction with spontaneous healing. Cases present themselves at times where there has been total destruction of the drum membrane and of the adjacent bony parts. There is a large cavity, so that one can look upward through the canal almost directly into the attic or antrum. If the outer wall of the attic has been necrosed, and healing has taken place, the parts may seem dry and thoroughly cicatrized, but at one or two places along the labyrinthine wall of the middle ear there is more or less necrosis. I would like to ask Dr. Allport if in his experience he considers this condition an indication for the radical mastoid operation.

Dr. Bayard Holmes: - The car doctors appear to consider a running ear an indication for the mastoid operation, and that this should be done only after the discharge has continued so long as to destroy everything within the tympanic cavity. It had always appeared to me that the real object of eradicating the mastoid cells was the termination of a suppuration within these cells, and that it was not necessary to await any destructive process in the tympanum, the petrosa or the interior of the skull. Suppuration within the mastoid is an adequate indication for the removal of the mastoid, and from a practical standpoint it is the only reason. To admit that many cases of suppuration within the mastoid terminate spontaneously, or after wiping out the external auditory meatus, or syringing out the middle ear, or irrigating out the antrum through the middle ear, is no contraindication to the prompt removal of a suppurating mastoid. In a family of eight I have seen twelve suppurating ears. Such a concourse of pathology as this would require extensive and even embarrassing operations to carry out these indications. Nevertheless I believe that the only safety of the patients and their only chance of health lies in the complete eradication of the suppurating cells. One of the greatest impediments to radical and prompt treatment is the fear of injuring the facial nerve. I have had occasion recently to study the literature upon this point, and I find that operators are extremely silent upon the subject. I have found more cases reported where the injury of the nerve occurred spontaneously in the course of the disease, and more cases reported where nerve grafting had been undertaken for facial paralysis, than cases of injury of the nerve after mastoidectomy altogether. I urge every operator to report every case of facial paralysis, with every detail of its occurrence and duration.

Dr. Joseph C. Beck:—Dr. Stein stole my thunder with reference to a point in connection with this subject, namely, the labyrinthine involvement, the indication for mastoid operation where labyrinthine symptoms are present or are associated with chronic suppuration. In my experience in this line of work I follow very closely the indications for the radical operation laid down by Dr. Allport and others here this evening. I have found cases in which there were distinct labyrinthine symptoms and have done a thorough and radical operation, as described this evening. The suppuration would cease, the whole cavity become epidermized and the patient was quite satisfied, except in regard to one thing, namely, marked dizziness, to which reference has been made this evening, and which is undoubtedly due to the wounding of the semi-circular canal. But this dizziness does and should ordinarily disappear in a short time. In these two cases where there was labyrinthine involvement following the operation, the dizziness was of much longer duration than has been stated to-night. In one of the cases it is now almost two years since the operation was done, and in this there were not only disagreeable labyrinthine symptoms, dizziness, etc., but the patient has been unable to sleep in the recumbent position. The patient sleeps sitting up, and this is largely because of the marked dizziness and ringing in the ear when lying down. On careful examination of this case I found in the region of the semi-circular canal a small granulation, with no discharge. This is contrary to the rule in surgery where we have granulation tissue to have some necrosis. But there is no discharge here, and when I touch that point distinct symptoms of labyrinthine irritation is produced. I would like to ask Dr. Allport what he would do in such a case in a surgical way. This point of granulation has been cauterized and every effort made to have it heal up, but this, together with internal medication, has been of no avail.

Another point I wish to speak of is with reference to suture of the facial nerve. Dr. Pierce alluded to a case I presented to this society of tumor of the middle ear where I either severed the nerve or the tumor did so. It is a question whether I injured or destroyed the nerve in removing this endothelioma from the middle ear. I believe that suturing of the facial nerve in this case is indicated, and I propose to do it some time soon. But Dr. Pierce stated the other evening that we should wait, and to-night he mentioned a case where there has been repair of the facial nerve after four years or longer. It seems to me we had there a contraction of the facial muscles or some remarkable reparative process of the facial nerve has taken place. Pallance and Stewart tell us that we should not wait long in these cases

because of the atrophy of the muscles, and possibly Dr. Allport in his closing remarks will say something about suturing the facial nerve.

Dr. F. C. Hotz:—The radical operation on the mastoid is well established as a legitimate one and does not need any defense. However, it is a formidable operation and ought not to be undertaken unless we feel justified in performing it. There is not so much difference of opinion in regard to the technic of the operation, nor as to its being a dangerous operation under certain conditions, but the diversity of opinion comes as to the indications. As has been stated to-night, if the paper had been confined to a thorough discussion of the indications so that we could draw the line when and when not to operate, it would have been better rather than to have covered the whole subject, as the author of this paper did. There is one group of cases in which the operation is unquestionably indicated, and in which, I dare say, there is not an aural surgeon deserving the name who would not operate. Dr. Allport has given us a pen picture, beautifully drawn, of a chronic suppurating ear, with symptoms of involvement of the mastoid, and then said, "Why is it reasonable to continue treating, scraping and flushing the tympanic cavity when there is pus retention in the mastoid?" Well, it was not necessary to set up a straw man and knock him down. No aurist will do that. We all agree that this group of cases calls for this operation. A difference of opinion comes when we have to deal with a large number of chronic suppurative ears which show no manifest symptoms indicating involvement of the mastoid. Dr. Holmes justly said that the indication for the radical operation is to remove the pus and diseased tissue from the antrum, certainly not from the tympanic cavity. But how can we tell for certain there is pus in the mastoid in the absence of all symptoms? There is the difficulty. It has been said that if in the treatment the ear discharge continues offensive, the offensive odor points to the retention of secretions, which decomposes somewhere in the middle-ear structure at a point beyond that which is being treated or beyond the tympanic cavity. It was also laid down as an indication that if a case does not improve and the discharge is not controlled under proper treatment in from three to six months, the cause for the continuation of the disease lies beyond the tympanic cavity. I suppose, of course, every aurist considers his treatment proper treatment, or he would not use it. But what is this treatment as a rule? A patient comes to a doctor, is examined, and he gets something to drop into the ear. He is told to syringe the ear every morning and evening and to report to the doctor in a week. Such treatment does little or no good. It is practically no treatment in a case of chronic suppuration of the ear. I regard that treatment as only proper which the aurist himself gives. I am convinced that if the aurist himself treats these ears, and does not leave the work to be done by the patients themselves, a great deal can be accomplished which otherwise would not be accomplished. I believe that many of the cases could be eured without any operation. Because the discharge continues, in spite of flushings and powderings, etc., it does not mean that the antrum is involved. I have seen cases in which the discharge was kept up by polypoid growths which could not be seen through the perforation; they were hidden in the attic or at the floor of the tympanic cavity. I have seen cases in which the attic was full of inspissated matter; the syringe had been used for months and months, and no amount of syringing would bring it out. But after the proper use of instruments which will go into the nooks and corners of the tympanic cavity, searching for the granulations and treating them directly, in many cases the discharges have been stopped without the necessity of performing the radical operation. The point I desire to emphasize, then, is this: that proper treatment can only be carried out by the surgeon himself, and if he fails in a short time by conservative treatment he is justified in considering the performance of the radical operation, and to come to this decision I do not need three to six months, but three to six weeks are sufficient.

Dr. Allport (closing the discussion):—The hour is late and it is quite impossible for me to answer all the remarks and questions that have been propounded. Besides this, I feel that I have not the ability to answer them properly, and, therefore, will satisfy myself with the addition of a few remarks prefatory to adjournment. I wish, however, first to express my extreme gratification that my

paper, or, rather, the subject of my paper, has aroused so much discussion. It certainly shows the widespread interest in the radical mastoid operation and a sincere desire to arrive at the correct status of the procedure. Some of my neighbors have frankly expressed themselves as disagreeing with me in some of my views, but as I understand it this is the best part of a medical discussion, and progress can only be made by the expression of free and honest opinions. I, therefore, desire to thank all the gentlemen who have taken part in the discussion and ean only regret that some of them seem to feel that I should have confined myself more closely to the announced subject, viz., "The Indications for Operation."

Dr. Pierce and Dr. Hotz express themselves as disappointed that I did not throw more light on this particular phase of the subject. This is, perhaps, due to lack of knowledge on my part, and perhaps due to the absence of distinct rules of guidance. Of course, we all operate in mastoid affections, either acute or chronic. where evident danger signals are manifested. The question under discussion this evening is, when shall we operate in chronic otorrhea where no alarming intramastoid or intracranial symptoms are present? And here comes up the matter of personal equation and of personal experiences. While perfectly willing to admit that many people carry discharging ears for years and practically a lifetime and then finally die of old age, or something else, I do not consider this an argument at all, for while it is undoubtedly true, yet the records show an appalling list of fatal brain infections produced from apparently quiescent discharging ears. Shall we wait, then, until the chill, erratic temperature and impaired mentality indicate a sinus thrombosis, or until depressed temperature and pulse and sluggish cerebration point to a brain abscess? Personally, I say No! Let us rather, by wise and unfaltering surgery, eliminate this danger focus and deliver to our patients a reascnably safe assurance of prolonged existence. We can not see inside the temporal bone, and, therefore, can not watch the uncertain and treacherous progress of osseous necrosis. Therefore, why should we assume to be on even reasonably safe ground because decisive and urgently alarming symptoms are not yet manifested, symptoms which, when once in evidence, immediately precipitate an extremely grave prognosis? I, therefore, felt that in laying down certain rules for operative guidance, which I pretend to follow myself, I had quite reasonably covered the point of "indications for operation." If I may repeat these views they can, perhaps, be briefly expressed as follows: When a chronic purulent discharge has existed for, say, six months, and continues unchecked after about six months of faithful and intelligent treatment, the time has arrived for operative interference. as it is almost certain evidence that necrosis has extended beyond the confines of the middle ear into the antrum and perhaps the mastoid cells, situations absolutely beyond the reach of any kind of local treatment. I believe this to be a fair and reasonable statement and one that will be heartily endorsed by almost all aural surgeons of wide experience.

This naturally brings up the question of what may be considered good treatment, and while varying views have been expressed upon this subject this evening by Drs. Gradle, Pierce, Hotz and others, I think they are all essentially the same, and simply consist in an endeavor to keep the ear in a clean and aseptic condition. Dr. Pierce likes, among other things, the gauze packings, which I like myself, and feel obliged to him for. Dr. Hotz curettes the attic, etc., with spoons and cleans away the accumulated inspissated masses, a procedure which we all use when necessary. Dr. Gradle thoroughly cleanses the middle ear and insufflates boracic acid powder, which we have all used for many years. He also depends much, when prognosticating, upon the aural odor, which view I am growing to respect more and more, and so I might proceed if necessary, to express other perfectly proper and accepted views expressed by these and other gentlemen, as to the treatment of chronic purulent otorrhea; but this is manifestly unnecessary as they are all practically the same, and I am sure I can assert with perfect truth and freedom that there is not an aurist in this room this evening who is not perfectly capable of properly treating this disease. The only question is, when should this treatment, if unsuccessful, eease, and when should operative procedures begin? My own answer to this question must reside in the general statement of my views enunciated a moment ago, from which my own personal experience, my reading and observation will not allow me to recede.

Dr. Stein has asked if I would suggest a radical operation in case necrosis was confined to the inner wall of the tympanum. In reply I would emphatically answer, No! If necrosis is confined to the middle car proper I do not believe that the radical operation is necessary, as I think it is practically always curable by middle ear treatment of proper character, such as we all use, perhaps supplemented later, when necessary, by an ossiculectomy and curettage. I believe it to be quite difficult, however, in an old ease of otorrhea to establish a diagnosis of tympanic neerosis, pure and simple, without antrum complications. I think this point can be best settled by time, and the clinical course of the disease under proper middle ear treatment. I think my paper must be worded very blindly to have given Dr. Pierce the idea that I do not comprehend the details of the Stacke operation. He evidently inferred that I believed the Stacke operation was accomplished without the orthodox incision back of the car, as is always made in all kinds of mastoid operations. I, therefore, beg to correct this interpretation of my paper, if others in this room gathered the same erroneous impression. Dr. Holinger, I think, referred to the difficulty in thoroughly curetting the mouth of the Eustachian tube. I can hardly agree with him in this as it seems quite simple, after the parts have been thoroughly exposed and wiped after the radical operation has been performed and is nearly finished, to find the tube orifice and thoroughly eurette it. Granulation tissue will frequently be found, and Dr. Whiting of New York has lately devised a conical hand burr for the work which renders it quite easy and efficient. Many of these cases recover with an imperfectly closed membrane, which can, I suppose, by courtesy be called a reproduced drum membrane. In such cases if the Eustachian tube mouth is not sealed from adhesive inflammation produced by the curetting, etc., just referred to, there will frequently proceed from the ear a mucus discharge, especially during the period of a eatarrhal cold, etc. Such mucus discharge, while undesirable and unpleasant to the patient, I do not regard as of any especial pathological importance, but it is to prevent it that an effort is made to seal up the mouth of the Eustachian tube.

I would be glad if you would look at this boy upon whom I have made a radical operation on both sides. The left ear was operated on six weeks ago and is, as you will see, entirely healed. The right ear was operated on four weeks ago and is nearly healed. I would like you to see and examine the boy, for you will see that he has practically no deformity either back of the ear or in either meatus, and that notwithstanding both ears have been operated upon, he has excellent hearing.

Again I thank you for the prolonged and interesting discussion.

A regular meeting was held Jan. 17, 1906, with the president, Dr. C. S. Bacon, in the chair. Dr. Gustav Kolischer read a paper entitled "The Modern Operation for Uterine Cancer." Discussed by Dr. E. Wyllys Andrews, who said:

The removal of the parametrium, as recommended by the writer, interests a general surgeon from the standpoint of rectal carcinoma, in which class of work we are now doing very much more radical abdominal or combined operations than we thought of doing when the Kraske was so much in favor. Lately in one case I removed at the same time, by a sort of Queen's operation, the parametrium and the uterus, attached to a carcinoma of the rectum, in one piece, with practically not a moment's additional time over ordinary rectal resection. It seems to me the technic we learn there is exactly in the line with the advanced work Dr. Kolischer has spoken of because, as one step of this extirpation, we have to tie first one and then the other internal iliae artery. That is exactly the "starvation" treatment which predisposes not only to a bloodless operation, but to the prevention of growth afterward. If any metastases tend to occur we find them easier than by the Kraske method. To make this ligation we also have, for a moment, to un-

cover both ureters; they lie so close to the little incision we make in the peritoneum to get at the artery we have to push them aside; we have to see them. Hence they can not be injured. It is exactly this point in forks of the vessels where we must search for glands; so that it seems to me the general surgeon and gynecologist are approaching a sort of common ground. In this one case in which I removed the uterus, incidentally, the broad ligaments scarcely needed any clamping or ligating because of the previous ligation. In the rectal cases we make a combined operation, because by it so many of these rectal carcinomas can be taken out and the sphincter saved; then we invert the patient, and if it be a woman we finish the operation as a vaginal one, or if a man by a sacral cut. Doubtless every word in which Dr. Kolischer so emphatically insists on more radical work in the uterine cancers is true, by common consent, and is as equally and positively true of rectoanal cancers.

The next order was a symposium on hernia, and papers were read as follows: "Methods of Suturing in Hernia Operations," by Dr. M. L. Harris. "Unusual Forms of Hernia—Interstitial Hernia," by Dr. A. E. Halstead. "Hernia in Children," by Dr. Frank X. Walls. These papers were discussed jointly. The discussion was opened by Dr. L. L. McArthur, and continued by Drs. E. Wyllys Andrews, Arthur Dean Bevan, A. J. Ochsner, Vietor J. Baeeus, Wm. Fuller, Gustav Kolischer, L. L. McArthur, and M. L. Harris.

DISCUSSION ON HERNIA.

Dr. E. Wyllys Andrews:—Historically speaking, we must give Bassini credit for having made an epoch in the surgery of hernia. At the same time it has interested me, in looking up the first Bassini paper in 1889, to notice that he himself speaks of his operation as a modification of that of Macewen's, giving the Scotch surgeon a great deal of credit. We must also remember that Henry O. Marcy, of Cambridge, in this country, claims to have been the first to do the type of operation that Bassini advocated. I have copies of his early papers, nearly twenty years before Bassini. Any one who visits Bassini's clinic will be interested in one thing, namely, that he emphasizes the fact that the upper ring is an orifice through the transversalis fascia; therefore all sutures that are introduced to repair that ring must be partly in this layer and hence posterior to the internal oblique muscle. They must, therefore, be behind the cord in part. Although the anterior operation is in vogue, most of those who have seen Bassini's work know that the vast majority of European clinicians are still using the posterior method. Even in Kocher's Berne clinic they do twice as many Bassini operations as they do Kocher's. Historically speaking again, I think it is true that the credit for doing the anterior operation is due to Ferguson, of Chicago. Whatever its real value, it ought to be called his operation. Ferguson called attention at one time to the anatomic peculiarities of attachment of the internal oblique muscle in front of the cord along Poupart's ligament in hernia cases. Dr. Ferguson tells me that he also puts one stitch behind the cord in addition to those in front. With the Harris wire suture an important point in its use which impressed me most was the admireble deep closure which we can make close up against the symphysis. One ean not commend too much the feature of a close, smooth line that the wire makes from Gunbernat's ligament clear up against the ring without leaving a weak spot, which might result in a recurrence.

Dr. McArthur's comment on his living stitch or ligature interested me very much. He showed a specimen of it under the microscope two years ago. I have been able to see that this criss-cross stitch was made up of living connective tissue. We have a sort of artificial intercolumnar fiber placed across the suture line. Knowing it is of great value in cases of hernia, I should think it would be also valuable in other parts of the body, although I do not know that it has been so applied. We can not eommend too much the remarks of Dr. Walls with reference to our ability to cure hernias in children, both umbilical and inguinal, without cutting. I have repeatedly offended practitioners who have sent cases to me by declining to operate on children with ruptures until trusses had been given a long trial. It is undoubtedly true that 95 per cent. of the cases of umbilical hernia in children, if proper treatment is applied to retain the hernia, will make spon-

taneous recoveries, and operation is not necessary. The yarn treatment is very good. We can also obtain trusses with celluloid or vulcanite covering, which will resist moisture and rust, so that the child can be bathed from time to time with them on. Otherwise in removing the support, while resting or as a result of coughing, the work of one or two months' retention may be lost by the hernial protrusion reappearing.

I believe, as one of the speakers said, that large direct hernias give rise to the most relapses. It is here that Bassini's method is disappointing, because the ring has a hard fibrous edge, which is not closed securely by his form of deep stitch. I never eared for the Wölfler everted flap of rectus sheath, although I did use it in the County Hospital last week on a very large recurrent hernia, where the usual anatomy was destroyed by former operations and failures. If anyone will try my umbrication he will find that it takes the place of all other flap methods

in the largest rings.

Dr. A. J. Ochsner: - I will confine my discussion to that part of the symposium which Dr. Walls has contributed, primarily because for a number of years I have been especially interested in the treatment of hernia in children. It happens that a very large number of children come to me for treatment of this condition, because of my connection with two hospitals that are largely patronized by Swedish and Polish people, so that I constantly have a considerable number of these children under treatment. In studying the literature of hernia in children I was greatly interested in finding that a commission appointed by the French government had made observations in a large number of eases of hernia under the supervision of Malgaigne, in which the history was followed, and in which it was found that 73 per cent. of all hernias in children healed spontaneously with or without treatment. To this observation was added another most interesting one. I found, in a number of children suffering from hernia, eomplicated with phimosis, that by keeping these patients in bed for two weeks, during which time they recovered from the operation for phimosis, the hernia became cured spontaneously. Putting these two conditions together, it seemed to me that, probably, the retraction of the hernia, whether it be umbilical, femoral or inguinal, the natural tendency of the canal is to close; that the reason why this closure is retarded in cases without treatment is because there is an abnormal intra-abdominal pressure present, as Dr. Walls has said. This abnormal intra-abdominal pressure may be due to gaseous distension, to a pressure due to the presence of constipation or a pressure due to the presence of cough, and consequently, in all of these children, with the exception of four distinct groups, the form of treatment which I have employed consisted in relieving this abnormal intra-abdominal pressure, whatever its eause might be. By relieving these conditions, I found in my practice, when I reviewed my statistics, that 97 per cent. of these cases recovered spontaneously in children less than 10 years of age.

The four groups of hernia in children, which I believe should be operated upon, are: 1. Irreducible strangulated hernias. I have had quite a number of eases of strangulated hernias in children, in which, by simply placing the child in bed for three weeks after reducing the strangulation, the hernia became cured permanently and spontaneously without operation. It would be foolish to use any 2. Those in violent manipulations for the purpose of reducing such hernia. which there is a reducible hydrocele, that is, a hernia with a hydrocele of the eord passing up into the abdominal eavity and out through the inguinal eanal. In that class the cure of hydrocele results in a cure of the hernia. 3. Those in which there is adherent omentum at the bottom of the sac. 4. Those in which there is great diastasis of the musele, in which there is no tendency at all for the muscles to come together spontaneously, a class in which Dr. Bevan has just described the operation of transplanting the rectus muscle and fascia. I have had the same experience as Dr. Andrews; a large number of cases of hernia in children have come to me for operation, upon which I have refused to operate, and I have the satisfaction of seeing them eured spontaneously afterward.

Dr. William Fuller:—I want to say a word with reference to the imbrication method or the method of overlapping the margins of the hernial incision. The

question arises whether this can not be overdone. It has seemed to me that it is possible to introduce sutures, in resorting to the imbrication method, so far from the margin of the hernial incision, that when the sutures are tightened it tears sometimes an opening at the point of the needle puncture in the external oblique aponeurosis. I would like to know whether this is due to a faulty technic or not. Perhaps Dr. Andrews can answer this question. This accident happened to me three or four times. It has seemed to me, therefore, that this is an occurrence which it would be well to guard against. It is important that we leave no weak points or slits in the aponeurosis of the external oblique, such as has been done in my hands when I have introduced the sutures too far away from the margins of the hernial incision.

Dr. L. L. McArthur:-Dr. Harris definitely marked out the era of modern hernia operations as beginning in 1888, when Bassini outlined his methods of dealing with inguinal hernia. A few years preceding that, say 1882 and 1883, the methods of treating hernia had so much improved through the application of antiseptic methods that surgeons had begun to take courage, operating upon cases which, preceding that time, had only been operated upon when surgical intervention was imperatively demanded. With the advent of antiseptic surgery it became possible to successfully narrow the inguinal canal to a much smaller lumen. I remember very well coming back to America at that time imbued with enthusiasm for Czerny's then vaunted operation for the closure of the hernia, which consisted in applying aseptic methods to the surgical closure of the canal, by the implantation for permanent residence a suture applied after the manner of a shoe lace, a needle on each end. Two-thirds or more of the circumference, of the canal were included in this shoe-lace stitch, one side after the other, until the canal had been diminished to one of fitting size for the passage simply of the cord with its vessels. That operation yielded decidedly better results than those which preceded it, because of one factor which changed former proceedings asepsis. When to asepsis were added the principles which obtained in the Bassini operation, which were more fully elucidated when Andrews showed the actual mechanical factors entering into it, the modern operation was appreciated. Those principles consisted not in bringing parallel fibers edge to edge, hoping thereby to obtain union by that aseptic granulation tissue of a delicate character which obtains when all aseptic union occurs, but in obtaining union between broad flat surfaces which were posed at right angles to the line of pressure, simulating the condition which obtains when two pieces of adhesive plaster are placed face to face. The difficulty of forcing them apart by pressure at right angles to their surfaces would be appreciated. So it is with our modern hernia operations; we unite broader surfaces than those which obtained in Czerny's time. Failures in hernia occurred, first, from a lack of aseptic union due to a suppurative process induced either by the ligature material used or by imperfect technic of the operation, later autoinfection of the buried sutures, three months, six months or a year after, because of micro-organisms floating in the blood and wandering out in the leucocyte when a certain amount of irritation by motion or pressure induced them to do. With an asceptic suture material it became possible to obtain good results by any of the methods, but not such results as will compare with those of recent date in which flat surfaces are brought together.

Six or eight years ago it was a doubtful question whether we could invariably sterilize absorbable suture material. At that time it struck me that if we could utilize some of the tissues which obtained in the wound, perhaps an advance would be made. Accordingly, in the last five years I have done every operation for radical cure (except one) by the method described in a paper of three years ago, after having waited three years before making my report. It consisted in using strips of the tendon of the external oblique, taken from the margins after the external oblique was split, in the usual methods for hernia. With that living external oblique suture it is quite possible to sew after the Girard-Andrews or Bassini method, making any form of operation that may please the fancy of the operative surgeon. I am a little chagrined that Dr. Harris should classify this as one of the absorbable sutures after the microscopic picture presented with the article, after the experimental researches made upon the lower animals, and

after the specimen from an individual who died a year after the operation from an appendicitis, and whose sear taken out still showed that these tendinous fibers remained living. Inasmuch as the line of union consists of an aseptic granulation tissue, connective tissue, it consists of that type of tissue which is capble of stretching. My idea, therefore, was that if I incorporated in this tissue which was capable of stretching, the white, inelastic living tissue of the external oblique, I added another factor to the strength of the hernial union and in this way benefited the patient. I believe now we have perfectly aseptic suture material, easily obtainable; that with the imbrication of the structures after the Bassini or preferably Andrews method, that surgeons will rarely utilize this living autoplastic tendon suture.

On Sunday last I was called to the hospital to see a patient who had on the preceding Wednesday been seized with a good deal of abdominal pain with vomiting. The patient, a man of 30, had a reducible left inguinal hernia when admitted to the hospital. He could speak very little English. But his history was substantially this: He had always a left inguinal hernia. He had no right hernia. He had never had any sickness whatever until this preceding Wednesday night. At that time he began to vomit, he had abdominal pain, and had no further bowel movements, although purgatives were given. High rectal enemata were given with no successful results. His abdomen was considerably distended, and what tenderness he had was immediately beneath the ensiform cartilage. This tenderness was pronounced. His temperature was 99½, pulse 90, leucocyte count 11,000. There was general tympanitic condition over the abdomen; but no tumor could be felt in the inguinal canals, at the umbilicus, nor through the rectum, From the subjective symptoms and the great tenderness which he manifested over the stomach, I made a right rectus incision, thinking he had possibly a small leaking stomach ulcer or trouble in the neighborhood of the gall bladder. Nothing was found in this neighborhood. The small intestines were crowded up anterior to the stomach and considerably distended. The incision was carried down lower permitting us to follow the small intestine by eventration until we came to a sac or a ring in which a knuckle of intestine had engaged, which sac was located behind the right inguinal ring, the side on which he denied ever having had a hernia. That sac held an incarcerated gut, the edges of the neck having caused gangrene in the wall of the bowel. This sac lay behind the right inguinal canal and extended down behind the obturator fascia. I am convinced now this was a case of properitoneal hernia. The man is still alive, and I hope to have a recovery, although he had gangrene of the bowel.

I, until the last seven or eight years, had felt that it was unnecessary, ill advised and perhaps a type of furor operations to take a child of 2 years, 3 years or 1 year old, suffering with a hernia, and submit him to an operation, and 1 believe with Dr. Walls that many a case of hernia in a child that has been brought on because of malnutrition, perhaps by a cough, whooping-cough or a severe cold (a large per cent. of the ruptures in children come from coughing or crying) can be treated successfully by a supporting apparatus until the muscular tone can be repaired by restoring nutrition or curing the cough, or preventing the child from crying. With this treatment, when the child grows up it will be as well as any having a strong abdominal wall, without ever having had an operation. It is true we can with safety now do an operation on these children, but I believe that many an operation is still made on these children because it can be done rather than because it is necessary.

Before the discussion is closed, I would like to make a remark in regard to direct inguinal hernia. Dr. Bevan has given credit to Wölfler for saying that it is curable by means of transplantation of the rectus muscle in its sheath. Transplantation of muscular tissue for the correction of hernia has proved a failure. The use of the rectus sheath is the utilization of the tendons of the oblique muscles of which it is composed. The use of the rectus sheath by an incision which cuts most of these tendons transversely to their tensile fibers is a poor utilization of it. If surgeons will not use the autoplastic method in any other way than in direct inguinal hernia cases, they have a rational means of using white inelastic tissue by taking those fibers which make the columns of the ring, and lacing the

direct hernia as a shoe is laced, with two lateral strips. A direct inguinal hernia can be cured without transplantation of the rectus muscle by the utilization of a

simple suture of living material.

Dr. Harris (closing the discussion): I did not go into the history of hernial operations; I simply mentioned the one epoch-making paper which revolutionized all of our operations for hernia, and that is the Bassini. Whenever an individual presents an epoch-making paper, brings forward new principles and a new operation, we find several who claim that they did exactly the same operation years before, and that was so after Bassini presented his paper. We knew of Marcy's operation, of Wölfler's operation, but neither of them appreciated or enunciated the principles which underlie the correct method of operating for hernia; nor were the principles ever announced and brought before the profession until after Bassini's paper. He announced the principle of the restoration of the obliquity of the inguinal canal, which I still claim is correct anatomically, and of suturing the wall by layers. These two principles stand today. I do not believe, as Dr. Bevan does, and we have had many discussions over this matter, that in a normal human being the cord ever passes directly straight through the abdominal wall. From the time anatomy was first discovered and written on, it has been found that the cord passed obliquely through the abdominal wall. I have never dissected a case where it did not. I have never seen one in my hernia operations where it did not, except where the hernia had produced a straight hole by the two rings enlarging and thus coming opposite each other.

Dr. Bevan said that most of his recurrences have been at the inner angle. That is where they take place. When you bring the cord straight out at the inner angle, that is where recurrences take place. Statistics of operations are what count. According to the statistics of Coley and Bull, of 1,300 operations where restoration of the obliquity of the inguinal canal was effected, there were six recurrences. Of 125 operations where cord was brought straight out, there were five recurrences. In other words, recurrences were ten times as frequent when the cord was brought straight out as when the obliquity of the canal was restored.

In ordinary hernias, with the wire suture, we never have any trouble. I would recommend the gentlemen who are having so many recurrences in the direct variety of hernia to use the longitudinal wire suture and then they will never have them. By means of the longitudinal wire suture, that inner angle can be so firmly and elosely closed up; the aponeurosis of the external oblique can be brought down so tightly and snugly to the inner edges of Poupart's ligament and Gimbernat's ligament that there is no opening left, and the wire will hold there long enough and firmly enough until the tissues unite, so there will be no recurrence.

A joint meeting of the Chicago Medical Society and the Chicago Urological Society was held Jan. 24, 1906, with Dr. Wm. L. Baum, president of the latter society, in the chair. Papers were read as follows:

- 1. "Syphilis of the Male Genito-Urinary Tract," by Dr. Henry G. Anthony. (See page 249.)
 - 2. "Tuberculosis of the Male Genital Tract," by Dr. A. H. Ferguson.
- 3. "Tuberculosis of the Male Urinary Tract," by Dr. A. D. Bevan. (See page 245.)

The symposium was discussed by Drs. F. Kreissl, Gustav Kolischer, Victor J. Baccus, A. H. Ferguson, and Arthur Dean Bevan.

DISCUSSION.

Dr. F. Kreissl:—Just a few words with reference to primary and secondary tuberculosis of the bladder. I am not so pessimistic as Dr. Bevan regarding the treatment of vesical tuberculosis, because my experience has taught me differently. It is true that in secondary descending vesical tuberculosis the results of topical applications or surgery of the vesical lesions will be disappointing, while the removal of the kidney, as the primary focus will be followed by a speedy repair of

the bladder lesions oftentimes without any further local treatment. Judging from my own observation and the experience of others, there is no doubt that a certain number of primary tuberculous lesions of the bladder, if not too far advanced, to get well under topical applications with iodoform, guaiacol, biehlorid, etc., and it is equally true that neither these nor any surgical intervention will have any result in very extensive lesions.

Referring to the difficulty of the diagnosis of tuberculosis of the cord, I have a case in mind which I had the pleasure of secing with Dr. Bevan and a number of other physicians in this city who all pronounced it as tuberculosis. The patient was a young man, 36 years old, who, after being kicked by a horse in the left lower abdomen, experienced much pain along the spermatic cord. Two weeks later while walking in the car of a moving train he slipped and fell astride the arm of a chair. Since then he has noticed a slight swelling of the epididymis and nodules of different size along the cord painful to touch. He gave a history of two attacks of pleurisy, loss of flesh, complained of a hacking cough and night sweats. While keeping the patient in bed for several weeks, the nodulation progressed along the vas deferens up to external inguinal ring when I decided on operation. Exposing the cord, I found a phlebothrombosis of a vein closely attached to the vas deferens. The night sweats were explained later on when the patient admitted that he was addicted to morphin and commenced to cure himself of the habit shortly before he came under our observation.

Dr. Gustav Kolischer:-It was first Kümmel and later Rovsing who pointed out that if we removed the inflammatory focus of a tuberculous kidney in certain cases, the bladder lesion would heal up. That is true, as proved by our own experience. It is just as true of primary tuberculosis or secondary tuberculosis of the bladder under eertain conditions, which will give very satisfactory results from operation, as Dr. Bevan mentioned. It all depends, however, what kind of tuberculosis of the bladder is found. We can neither say in a general way that the removal of the focus of tubereulosis will effect a cure, nor can we say such a focus of tuberculosis of the bladder will not heal. These things can be determined only by the pathologie facts. We may find around the ureteral opening that there are a few disseminated uleers, with undermined edges, and a few gray tuberculous nodules. In such cases we get very favorable results if the kidney which eaused the descending tuberculosis is removed. We get a good result whether we interfere locally or not. Roysing especially recommended the injection of 5 per eent. carbolic acid solution into such a bladder after the kidney is removed. In the case of a young girl upon whom I operated a few months ago, for the removal of the kidney on one side, we found three ulcers, which healed up inside of three weeks after the operation. Now, whether the healing of these uleers was due to the injection of the carbolic acid, or to the removal of the kidney solely, I do not know. If we find disseminated tuberculosis in the mueosa of the bladder we will have good results.

The first good results were reported eighteen years ago by Bardenheuer, who made a suprapubic cystotomy, and excised the entire bladder mucosa, which he thought was involved in the tuberculous process. We get exactly the same results in eases of limited disseminated tuberculosis by local interference. Dr. Schmidt presented such a ease years ago before this society, in which both the clinical and microscopical diagnoses were tuberculosis, with the presence of a few ulcers. Dr. Schmidt curetted the ulcers, then cauterized them, and effected a cure. If we get tubercular cystitis, where the mucosa and submucosa are involved in the tubercular process, and there is an infiltrating tuberculosis, whether it is primary or secondary, whether we remove the kidney, the prostate, or the whole genitourinary apparatus, whether we excise the mucosa or cauterize and apply iodoform, or anything else, we will never have a favorable result. These cases are incurable. Involvement of the submucosa, or the muscular coat in the infiltrated form of tuberculosis is heyond cure. Removal of the kidney, excision, cauterization, are followed by no result whatever.

There is one point to which I desire to eall attention, and that is quite often the first symptom of tuberculosis of the kidney, is frequency of urination. These patients, often without further examination, are treated by different methods. The urine is not properly examined. In young women, where the bladder is extremely tolerant, tuberculosis may exist for any length of time without causing serious symptoms. We find quite often, if we examine the bladder with the cystoscope, ulceration around one of the ureteral openings; if the patient had never been subject to any other infection, genorrheal or otherwise, that points to a diagnosis of tuberculosis of the kidney. I can not emphasize too strongly the importance of examining the urine carefully in these cases, preferably by the inoculation test.

I would like to call attention to one technical trick which is useful in such cases. Tuberculous bladders are irritable, not in the usual sense of that term, but it is impossible to dilate such a bladder artifically. If you try to flush out the bladder by repeated flushings, it will become so irritated that it will not dilate any more. In such cases it is advisable to use the method which Fenwick generally employs, that is, simply waiting until the urine dilates the bladder, and then using the cystoscope. We do not encounter any difficulties in using the cystoscope then, because there is not much secretion of pus and we can bring the cystoscopic window close to the wall of the bladder.

Dr. Victor J. Baccus:—I have read the article of Rovsing to which Dr. Kolischer referred, but he is much more enthusiastic over his results of bladder tuberculosis after the primary focus in the kidney is removed. He claims that by irrigating the bladder with a 5 per cent. solution of carbolic acid he has seen extensive ulceration of the bladder heal. These irrigations were made daily, and a 5 per cent. solution of carbolic acid is allowed to remain in the bladder five or ten minutes.

Dr. Bevan, closing the discussion:—I would like to emphasize one point that has been developed in our recent work in connection with genital tuberculosis, that is, tuberculosis very frequently is primary in a single kidney, and that the lesser operations of nephrotomy and resection can not be relied upon; that the weight of evidence would seem to be in favor, where we make an early diagnosis and determine the existence of another healthy kidney, of a radical removal of the involved kidney. This is the one great step that has been developed from our recent study of tuberculosis of the urinary organs.

A regular meeting was held Jan. 31, 1906, with the president, Dr. Charles S. Bacon, in the chair. Dr. Elmer L. Kenyon read a paper on the treatment of stammering.

THE TREATMENT OF STAMMERING.

ELMER L. KENYON, A.B., M.D. CHICAGO.

The speech mechanism is a contrivance by which a walled column of air may be quickly set in motion by compression upon its closed end, while at the same instant its outward movement is impeded in a definite manner at certain points in the course of its passage. A certain retarding placement of the articulating organs, tongue, teeth, palate, etc., produces its own characteristic elemental sound, and all of the sounds resulting from the various placements constitute together the elementary sounds of the language. In the production of the complicated movements required for each elemental sound, each organ of the speech mechanism must aet in instant harmony with the corresponding movements occurring in each one of the other organs concerned in the production of the particular sound. It is important to recall, also, that this whole process goes on without conscious direction, that is, automatically. In carrying on the speech function it is thus evident that an exceedingly intimate association of action between the groups of muscles of the speech series is required. All must act at the same instant in mutual harmony. Imperfection or hesitation in the movement of any one group is capable of disturbing the smoothness of action of all, and thus the whole apparatus may become disconcerted.

Here lies the key to the explanation of the disorder of speech in question. Resting usually upon a nervous constitution somewhat easily perverted, stammer-

ing is a functional disturbance in the action of the complicated nervo-muscular speech mechanism. Most often the laryngeal lags behind the articulative apparatus, or else does not act vigorously and distinctly enough. This results in a wavering, a hesitation. There are various sorts of effort for relief made and various degrees of intensity in the struggle. Behind this difficulty with the laryngeal sound we usually may discover a deficiency in the compressive action of the chest, or else imperfect methods of breath control. Muscular spasm enters more or less into most cases of hesitation. Imitation, suggestion and habit often play a most important part in the explanation of individual cases. The peripheral organs of the stammerer are not impaired in any manner peculiar to this class of sufferers. But peripheral abnormalities of the common type may be the determining factor in setting going the slight imperfections of co-ordination which are to result in a stammering habit.

Coming to sum up these brief suggestive remarks upon the nature of stammering, we should bear in mind the subconscious control and action of the speech mechanism, the functional character of the disorder and its usual basis in an easily disconcerted nervous organization, its possible incitation by peripheral abnormalities, the tendency of the trouble to become more and more firmly engrafted as time elapses, and, we should add, the helplessness of the sufferer—

barring exceptional cases—to relieve himself.

In meeting the problem of treating stammering three main ideas are to be advanced: 1. Education. 2. Discipline. 3. Correction of general organic disability and of peripheral abnormalities. The last of these considerations we shall pass over lightly, as bearing rather upon individual cases than upon the general problem of treating stammering. Abnormalities in the region of the tongue, palate, pharynx, nose or larynx capable of interfering with the free movement of the organs concerned in the production of speech should, if possible, be eliminated; and in individual cases the general health and strength are not to be overlooked. Coming, then, to the main considerations of "cducation" and "discipline," we must, first of all, bear in mind the helpless ignorance of our patient concerning the technic of speech production. Therefore, in order that he shall acquire a knowledge of what to do in order to handle his speech apparatus, we at once make him a student of normal speech from the standpoint of the technic of its production. Also, the control of the speech mechanism is severed, so far as can be, from the control of the subconscious centers and placed in charge of the superimposed conscious mentality. The speech organs hereafter during his training are to act exactly and only as the will directs. The handling of the chest for compressing the air column and the manner of action of the articulating organs and of the larvnx in the production of each elemental physiologic sound are carefully taught. These sounds and their simple combinations in great variety are practiced. Words are spoken with distinct syllabication.

In order to accomplish our purpose, the acquirement by our patient of a full and ready conscious control of the speech apparatus, he is set definite, conscious tasks, each having reference to the demands of normal speech. He must exercise positive, unhesitating control of his speech mechanism. Each muscle group must act in exact harmony with the other muscle groups. Bearing in mind the chest action particularly, the patient is to be given as ready control in this direction as, for instance, of the opening and closing of his fist. The enlargement of the chest capacity and the proper control of the breathing for speech purposes are matters often demanding especial training. Indeed, each instance of the disorder will be found to present its own peculiar needs. Extreme muscular spasm will require especial adaptations in order to produce diffusion of the overconcentrated nervous energy. In the course of time the patient has ceased to stammer. He has gained control of his speech mechanism and directs it correctly in detail as a conscious process. But even then the fight is only well under way. Through the conscious correct action of the muscles of speech the discipline of the subconscious nervous structures must go on until they can be freely entrusted to assume control. A firmly rooted habit of any sort is not easy of eradication. The persistent exercise of firmness of purpose through a long period and often under trying circumstances sometimes taxes the stammerer's will to the uttermost. In some cases we are

obliged to confront this situation, that the patient would rather stammer than carry out the fight necessary for his release. The forceless and vacillating in temperament will be a much harder problem than the courageous and firm. The former may require much encouragement for months, or even years, while the latter may recover normal speech with remarkable quickness. It will be seen that the tactful resourcefulness of the director will find unending occupation in the course of his labors with the various types of the disorder and with the various temperaments of the sufferers.

The beginning of training should be made as early as the discovery of the fault. This forestalls the establishment of the habit feature, which is in itself difficult to overcome. If the family physician who first sees these cases would assume unhesitatingly, even though the defect be slight, that the general development of serious stammering is the regular outcome, and if he would proceed accordingly, untold mental suffering could be averted. It may be necessary in the very young child chiefly to guide him out of his excitable periods and into a slower and more distinct and more forcible manner of speech. But even in the young child it usually is desirable and even necessary to enter upon a simplified course of training upon the general lines already laid down. The factors which bear toward a less hopeful prognosis may be stated as follows: The instances in which the disorder is most firmly rooted in the nervous structures are least hopeful. Habitual severe spasms render the case much more difficult. The older the patient the more firmly the habit is rooted and consequently the harder the cure. Extreme weakness of will as well as extreme indifference constitute, unless they can be controlled, almost hopeless mental states. Finally, circumstances interfering with an efficient course of training are sometimes hard to overcome. In actual experience the element of doubt most often arises from the difficulty of enforcing a sufficient degree of earnestness and persistence. In general the majority are curable and nearly all can be much helped.

The author wishes to acknowledge his indebtedness to many authorities, including particularly Merkel, Gutzman, Kussmaul, Bell, Makuen and Wyllie. He takes especial pleasure and satisfaction in publicly acknowledging his great indebtedness to Dr. G. Hudson Makuen, of Philadelphia, whose patient personal interest and guidance, taken with his fine mastery of this subject, has accumulated an indebtedness not easily to be repaid.

34 Washington Street.

Discussed by Dr. West and Dr. Kenyon.

Dr. Alex. C. Wiener read a paper entitled "Artificial Hyperemia in Surgery (Bier's Mcthod)." (See page 241.)

Discussed by Drs. Edward H. Ochsner, Edwin W. Ryerson and, in closing, by Dr. Wiener.

DISCUSSION.

Dr. Edward H. Ochsner: - Eleven years ago this month there was in this city a man who called himself Sampson, who was a great athlete, and I had the opportunity of examining him. He suggested to me the usefulness of a treatment similar to that advocated by Bier. I do not know where he got it, but immediately after his suggestion I had an opporunity to use it on a patient with severe involvement of practically all of the joints of the body. It differed somewhat from the Bier method, but I found it so useful that I have used it constantly ever since in many cases, and with the exception of one or two cases, who refused to continue treatment, I have had remarkably good results. To-day I had a patient in the hospital for an operation who has been under this treatment for the last two months, because of gonorrheal involvement of nearly all the joints of the body, and the improvement was so marked that the joints were all free, except the shoulder joints, where the application of the method is rather difficult. The treatment was not given to me in detail. I had to work it out. The method is the following: I take an ordinary elastic bandage, ordinary elastic tape, and apply it around the extremity until the pulse stops beating, and when the pulse stops beating I have reason to believe that both the arterial and venous circulation have been interrupted. I now relieve the construction until the radial or post-tibial

pulse can again be felt. From this point on I differ from the old-fashioned Bier's method. I then direct the patient to perform all the different movements that are possible with the limb. For instance, if it is the arm I direct the patient to make slow motions, extension and flexion, ten times, then the different motions of the wrist. If the treatment is properly applied it causes no pain, and when the constriction is taken off, the arm or the extremity, whichever it may be, is red and warm. I am very skeptical as to whether the ordinary Bier treatment would be as useful in these conditions. In inflammatory conditions, where you want mobility of the joint, I should very much prefer the active method of treatment. It certainly has a wonderful power to absorb the deposits in the joints. Patients who have been bedridden for two weeks and months, and even years, if they can get any motion at all in the extremity, will absorb practically all of the deposits. If there is no motion in the extremity I anesthetize the patient first and break up the adhesions and then begin the method, and in a relatively short time the motion of the joint will come back.

In reference to the use of Bier's method in tuberculous joints I have been very conservative, as I have had such excellent results with the old-fashioned method of treatment. However, in order to get good results one must follow it out logically. It consists, first and foremost, in preventing secondary infection. That is the essential thing in the treatment of tuberculous joints, and it is a thing that nine men out of ten have not learned. The number of cases I see yearly where some surgeon has changed a harmless, simple tubercular infection of a joint into a serious, severe, dangerous, life-endangering condition, with secondary infection, is appalling. The first and most important thing, then, is not to cause secondary infection. The second thing, if one follows the old method of treatment, is immobilization, and the third thing is hygienic treatment. If one decides to follow the old method of treatment he must follow it and not vacillate between the two. I follow the old system and have had uniformly good results with it, and because I am not so sure that Bier's method is going to give as good results I have been willing to let other people try the Bier method first.

Dr. Wiener mentioned a boy who developed tuberculosis of the lungs, in which the Bier method of treatment was used. I do not wish to ascribe the lung condition to the Bier treatment, for patients with tuberculosis of the joints are liable at any time to develop pulmonary tuberculosis, but the question as to whether a larger percentage of these cases develop pulmonary or miliary tuberculosis following the Bier method of treatment than they do by the old system of immobilization and rest has still to be worked out, and so long as the old method continues to give me as good results as it has in the past I am perfectly willing to let others

solve this problem.

Dr. Edwin W. Ryerson: - My experience with the method of Bier has been confined entirely to the treatment of tubercular joints. I do not know anything of what it does in other kinds of infections and other kinds of diseases. I take the position that anything which anybody has found useful in the treatment of tubercular joint disease should be investigated very thoroughly. Tubercular joint disease is one of the most relentless, one of the most difficult diseases to cure, and one of the most persistent things I know of, and I am willing to try anything that offers any reasonable amount of hope. When I first heard of this method I did not think it was worth the paper the description of it was printed on. I did not see how simple passive congestion of any joint could affect the tuberele bacilli that were deeply situated in some bone focus far below the power of this constriction to reach. But I read a good deal about it, and have now tried it in five cases, and it seems to me the cases in which I have tried it and am trying it have done better than the ordinary cases in which it has not been used. When Dr. Wiener takes the position, however, that we can use Bier's eongestion method alone and succeed in so very many cases I differ with him. I take the same position with regard to iodoform emulsions injected into joints. It is not many years ago that distinguished surgeons in this city were taking little children with tubercular hips or tubercular knee joints and shooting them full of iodoform emulsion, and sending the children home and saying, "That is all you need to do." I have seen

some of the late results of that kind of treatment, and I do not propose to have my cases subjected to such reckless and reprehensible treatment. I do not propose to have Bier's congestion method alone used in a knee or hip joint that is diseased and carious, that is full of tubercle bacilli, but I do propose, as I have done in the past, to keep on with fixation dressings, so as to give me a large proportion of perfectly useful and good joints. There is no reason on earth why Bicr's method of congestion can not be used in connection and in conjunction with our splints, our immobilization, protection, possibly traction, if that be judged necessary. There is no reason why an elastic bandage should not be applied once a day or twice a day, or as often as the surgeon deems it is necessary, and the fixation continued during the rest of the time. And that is what I have done. I have a case under observation treated by the Bier method that is doing better than is my general hope for such cases. I have other cases that are improving fast. I recall one case in the service of Dr. Hosmer at the Policlinic, a man, 53 years of age, with a tubercular elbow, the kind of case in which one would expect conservative treatment to be useless and which would call for resection or amputation. This joint was interefered with slightly, that is, it was opened and superficially curetted and drained, and then the Bier method was tried. There is now the very slightest amount of discharge from the one remaining small sinus. The swelling is all gone; there is a little motion in the joint, and everything seems to point to a rapid and perfect recovery. As to motion, I can not speak. But I wish to point out that in my opinion any man who lets his patients walk around on diseased knees or ankles without protection, without some form of apparatus that takes the possibility of weight-bearing off of that joint, is not treating the patient in the broadest way, according to my views. The mere mechanical irritation and wearing away of two diseased joint surfaces are very great; in addition to the destruction of the tubercle bacilli, the mechanical grinding of the two joints against each other is certain to produce harm, and when it is so simple to use fixation and protection, as well as such things as Bier's method and possibly injection with iodine, the child should be given the benefit of the doubt and given every possible form of aid.

The trend of modern treatment of all forms of tuberculosis is to keep patients out of doors as much as possible, as they do much better than those cases that are treated in hospital wards. I can not let the opportunity go by without the remark that all cases which can be kept out of doors, just as is being done now with patients with tuberculosis of the lungs, will get along much better than they have

done in the past.

Dr. Wiener (closing the discussion):—Dr. Ochsner made the remark that he was doubtful whether the lung infection in the boy was produced by the Bier treatment. In this boy the lung was first infected and tuberculosis of the ankle joint was secondary. An abscess was opened, and as usual this procedure was followed by one of those much dreaded mixed infections. The case was turned over to me by Dr. Butler, who had, on examination, found lung lesions.

The Bier treatment and hygienic treatment are, of course, not opposed to each other. Quite on the contrary. If Dr. Ryerson thinks that a child with a tubercular joint which causes considerable pain will use that leg he is very much mistaken. He knows better. The child will refuse absolutely to walk. Whenever Bier's treatment is used for a couple of weeks an intelligent child, even two and a half years of age, will by its own volition step on the foot and surprise its mother. As to mixed infection of the ankle and knee joints, it is absolutely necessary to treat them with the Bier method if you want to have good results. Ten, even five, years ago Bier was a very much abused man in Germany. Everybody laughed at his method. It is very essential to witness this method of treatment. It is surprising to notice the results from it. Nature has provided pain to protect us. If pain be absent, we know it can do a patient no harm to use the extremity, and I can assure you you do no harm if you treat a patient by the Bier method. Do not expect results in tuberculosis sicca. Do not use it in very progressive mixed infected cases exclusively. Bier's method does not exclude operative work for the purpose of cleaning out sequestra and necrosed tissue. On the other hand, if you have a patient who comes under your care with a high temperature, who is

emaciated, has night sweats, who suffers in addition to changes in the lungs from tuberculosis of joint, use the Bier treatment prior to operative procedures. After the patient has been operated on, reduce the Bier treatment to one hour a day. We know that a patient suffering from gonorrheal infection of the knce joint, which is badly swollen, very red, will ery out if we approach the bed and lift up the bedclothes. This condition will soon be alleviated by the Esmarch bandage. In using the Bier treatment in acute cases it has to be applied in a hospital; the interne has to be in constant attendance to relieve the patient whenever pain starts. You have to find out the amount of tension the patient can stand. After this treatment pain and swelling are relieved in twenty-four hours, and the temperature, which ranged from 192° to 105°, goes down to normal in three days. On the fourth day the swelling disappears and the patient can move the joint. Again, if you have pus infection of the joint and there is danger of ankylosis afterward, use the Bier treatment. Then the pus becomes practically sterile, and with small incisions you remove or aspirate it. While the matter is still running out you institute early passive and active motion, which will prohibit stiffness, whereas by the old methods ankylosis is the rule. Tubercular joints can and should be treated out of doors. Acute infections, gonorrheal or otherwise, should be treated as yet in hospitals.

Dr. Alfred C. Croftan followed with a paper entitled "An Analytical Study of Uremia, with Some General Considerations in Regard to Its Causes and Treatment." Discussed by Drs. N. S. Davis, James B. Herrick, a member and, in closing, by Dr. Croftan.

AN ANALYTICAL STUDY OF UREMIA, WITH SOME GENERAL CONCLUSIONS IN REGARD TO ITS CAUSES AND TREATMENT.

ALFRED C. CROFTAN, M.D. CHICAGO.

(Abstract.)

The prevalent belief that uremia is due to insufficient elimination of excrementitious urinary bodies through the kidneys and resulting retention of these ingredients in the blood and tissues does not stand the light of critical illumination, for there are many cases on record of complete anuria persisting for many days, even weeks, in which none of the typical signs of uremia developed. Inversely, uremia has often been known to appear when the excretion of urinary solids and water did not deviate in any way from normal. In nephrectomized animals death occurs very soon, it is true, but the symptoms are not synonymous with those considered typical of uremia in human beings. If urine is finally injected into an animal, poisoning sets in, but the symptoms are different from those of uremia. We must, therefore, clearly distinguish, it appears, between uremia and urinemia, or urine poisoning. Many of the signs of urinemia appear in uremia, but also certain other signs besides; and as the latter are particularly characteristic of uremia, and as they never occur in simple urine poisoning, we are forced to the conclusion that they must be due to other causes than the simple retention of bodies that should normally have been excreted in the urine. Again, if uremia were due to retention of these bodies, then the blood in uremia should show an increase and the urine a corresponding decrease of urinary substances. A critical sifting of the data on this subject scattered through the literature, coupled with a few studies by the author, fails to reveal, however, that such conditions actually exist in most cases of uremia.

Attention has been directed chiefly to the nitrogenous bodies and to the inorganic salts of the blood and urine in uremia, principally because these two groups are well characterized (at least as groups) and their analysis is comparatively simple and exact. In the case of the nitrogen bodies the following statements approximately summarize what has been discovered: 1. Uremia often develops without any determinable accumulation of nitrogenous bodies in the blood. 2. Uremia occasionally develops when these bodies are below normal in the blood. 3. Uremia often fails to appear in many states in which the increase

of the nitrogenous constituents of the blood is very marked. In the urine similar conditions are found in regard to the nitrogenous bodies, viz.: Uremia may occur (1) when the patient is in nitrogenous equilibrium, i. e., when the nitrogen intake corresponds to the nitrogen output, (2) when the nitrogen output is far above normal, and (3) when the nitrogen output is below normal as compared to the nitrogen intake. It does not appear from these collected statistics that uremia is by any means more frequent when the urinary output of nitrogen is low than when it is normal or high. (That the manifold dietetic and metabolic factors that influence the urinary excretion of nitrogen have been carefully included in these calculations need not be emphasized.) Whatever inaccuracies of method may be feared to vitiate the result in the case of the nitrogenous bodies of the blood and the urine need not be dreaded in the case of the inorganic saline constituents of the blood and the urine, for here we can employ certain physical methods of quantitative analysis that are very exact. I refer to cryoscopy of the fluids to be analyzed and the determination of their electric conductivity, as both the freezing point and the electric conductivity are functions of the salt content (molecular concentration) of the blood or the urine, and as they are almost totally independent of the presence or absence of nitrogenous bodies the figures obtained from the numerous tests that can be made in the same subject within a short space of time by these methods give us invaluable information in regard to the concentration of the urine and the blood in uremia. A summary of the findings in regard to the salts of the blood and urine in uremia reads as follows: 1. An increase of the salts of the blood is by no means a constant finding in uremia. 2. Uremia often occurs when the salt values of the blood are normal, or even under normal, with corresponding conditions in the urine. 3. Uremia does not always occur when the salts of the blood are very markedly increased and those of the urine correspondingly decreased. There is, in fact, less evidence to show that uremia is due to salt retention than to the retention of nitrogenous bodies.

One point must be remembered in interpreting these findings, viz., that possibly in uremia certain abnormal nitrogenous or saline bodies other than those ordinaily found in the urine might be circulating, and that these bodies, being highly toxic, might produce an enormous effect and still be present in such small quantities that they would not appreciably alter the molecular concentration of the blood nor the absolute quantity of circulating nitrogenous bodies. This hypothesis will be presently referred to again. So much can, however, be said with certainty that none of the normal urinary bodies can be accused of creating the syndrome of uremia, for none of them are toxic in quantities that could not be detected by the chemical methods employed in searching for them. One might think, for instance, of potassium salts (a very popular theory), but these have never been demonstrated in toxic quantities in uremic blood. All this evidence, then, negatives the retention theory of uremia. The questions arise: 1. What is the character and the origin of the poisons (if they are not normal urinary bodies) that can be accused of producing uremia? 2. What function or functions must become perverted, what organs must become diseased (if not the kidneys) in order that these poisons may be formed? For in the absence of any organic postmortem changes to explain the syndrome of uremia one is forced to the conclusion that there must be poisons. One of the most striking facts that has been elicited in this study of uremia is the following one: The urea, both of the blood and of the urine, is almost invariably decreased, while the ammonia is increased. It is, of course, a well-known fact that the urinary urea is, as a rule, far below normal, even when all dietetic factors are taken into consideration in uremia, and this fact has been generally interpreted to signify that urea is retained. If this were the correct idea, then the urea of the blood should always be correspondingly increased; and this is not the case. It seems more probable that the deficient urea elimination in many cases of urea is due not to urea retention, but to non-formation of urea. This would explain the increase in the ammonia and point to the liver as one of the diseased organs, for it is well known that the bulk of the circulating ammonia (immaterial what its source) is converted into urea in the liver. When this ammonia is returned to the blood unchanged and appears as ammonia salts in the urine, at the

same time the urea elimination is correspondingly decreased. Other facts point to a derangement of the liver, although not with the same convincing force as the above finding. I refer, for instance, to the very common increase of the purin bases as compared to the uric acid of the urine, the increase of uric acid relative to urea and similar findings, for the purin bodies should be converted into uric acid and the uric acid into urea in the liver, and interference with the liver function leads to an arrest of these conversions. In addition we not uncommonly find in preuremic states a reduced tolerance for carbohydrates and alimentary glycosuria, and this, too, points to the liver as the affected organ. There is other chemical evidence of similar character that can not be discussed in this abstract. There is, moreover, much a priori clinical evidence that supports the idea of an hepatic rather than a renal origin of many cases of uremia. I need only call attention to the fact that, clinically, disturbances of the liver and the kidneys commonly go hand in hand, whereas, however mild functional disorders of the kidneys are at once recognizable in the urine, it is immensely difficult to discover direct evidence of functional inadequacy of the liver in most cases; the frequency of mild hepatic disturbances in many of these cases would, however, be readily obtained, I believe, if the liver were examined with the same degree of accuracy in each case of uremia as the kidneys. The same toxic agencies, moreover, that affect the kidneys and produce nephritis, also, as a rule, affect the liver; for to the liver and the kidneys jointly is relegated the chief disintoxicating function, not only for poisons that are formed in the bowel (and that they play an important part in the pathogensis of Bright's disease I have recently attempted to show), but also for so-called metabolic poisons, i. e., products of perverted metabolism that are formed in the tissues of the body or in the liver itself, and of necessity reach the liver in the circulation before they are borne to the kidneys.

If we assume that the kidneys are always primarily diseased in cases that ultimately determine toward uremia (and I know of cases of fatal uremia in which the kidneys were found practically intact), then the bulk of the intoxicating function would be thrown upon the liver and we soon would have damage to this organ, manifesting itself primarily in a variety of functional derangements, such as those mentioned above. The character of the hepatic lesions would, of course, depend in each case upon the virulence of the circulating toxins and the length of time during which they circulated.

Another result of primarily defective kidneys would be the following: The kidneys are selective filter, intended in health to favor the passage of a variety of inert and useless end products of metabolism and to prevent the passage of other bodies that are still useful to the body. When the kidneys become diseased this filter leaks, and as a result there is a loss in the urine of bodies that still contain some potential energy and that should properly have been further disassimilated in the tissues at large, and especially in the liver. When such a loss occurs the liver and the other most active organs of metabolism must make up for this deficit by overactivity, i. e., by burning up more pabulum than normally, and as a result fatigue of those organs-in other words, functional inadequacy-must inevitably result sooner or later. When this happens, metabolism becomes perverted into abnormal channels and the blood becomes flooded with poisonous intermediary bodies or with substances that are altogether foreign to normal blood; and it is well to bear in mind that the more these bodies maintain an albuminoid character the more toxic do they become. That the general metabolism of albumin is perverted in uremia is further rendered probable by the frequent appearance in uremia of members of the acetone group in the urine and by the development of the general syndrome of acidosis that is frequently indistinguishable, especially in coma, from the acidosis of diabetes; in fact, I believe that acidosis plays as important a part in terminal uremia as it does in the terminal stages of the diabetic intoxication. Acidosis, too, would help explain the large ammonia excretion in preuremic and uremic states, for whenever the blood stream becomes acidulated, ammonia is thrown into the circulation (at the sacrifice of urea) in order to cause the rapid

^{1.} The circumstances and treatment of Bright's disease, Jour. A. M. A., June 24, 1905.

climination of the acids as ammonia salts and to protect the alkalinity of the blood and the alkali eontent of the cells of the body. Such an autointoxication, then, may follow or accompany chronic renal disease and still be due more to hepatic than to renal inadequacy; it might even appear without any involvement of the kidneys. The liver is presumably not the only organ affected. The uremic disturbance involves the general metabolism. Given such mild degrees of hepatic insufficiency as have been described above, it would not require much to cause an acute exacerbation and therewith a uremic attack. What these manifold factors may be can not be enumerated in this abstract. One thing becomes clear, however: that it is of as much or even of greater importance to recognize early stages of hepatic insufficiency, if one would prevent uremia, as of renal inadequacy, and that treatment, to be successful, should be directed as much toward correcting the general metabolic perversion and the disorder of the liver in particular as toward correcting whatever defect may be discovered about the kidneys.

In regard to the general principles that should, therefore, obtain in the treatment of uremia, I quote as follows from my recent article in the Journal of the American Medical Association: "We are wont to treat uremia by stimulating the flow of urine, by purging and by sweating, with the intention of forcing the kidneys to resume their work, and of ridding the body of the urinary bodies that we imagine to be circulating in excess. In addition we attempt to regulate the diet in such a way that there shall accumulate in the blood the smallest possible amount of residual nitrogenous bodies (Harnschlacken). If, now, uremia is not due to the eirculation in excess of such bodies, the above therapy is wrong. It is questionable, moreover, whether any of the above measures can at best do more than rid the body of the water, some sodium chlorid and possibly a little urea; the loss of water one might imagine to do more harm than good, for it should promote the concentration of the poisoned body fluids and hence render them more toxic. There is surely no exact evidence to show that the sweat or the urine of uremic cases after the use of diaphoretics and diuretics becomes more toxic than before; nor has any one ever succeeded in demonstrating in such sweat or urine any of the albuminoid or alkaloid bodies that must be accused of causing the most fulminating symptoms of uremia.

"The chief object of treatment should be to prevent the development of acute uremia by giving attention to those organs and functions that threaten to fail. In order to do this intelligently, the renal idea should be relegated to the background and more attention should be bestowed in pre-uremic states on the liver and the general metabolism. The liver, above all, should have a rest. To stimulate the liver in chronic uremia is bad practice. The same principles should obtain here as in the treatment of a fatigued heart or a fatigued stomach or a fatigued nervous system. First rest, then graduated exercise until the normal tone is regained. Stimulation should be reserved for emergencies and as a last resort. To accomplish this end all articles should at first be eliminated from the diet that can irritate the liver or stimulate it to increased functional activity; every effort should be made to reduce intestinal putrefaction to a minimum, for intestinal toxins as they reach the liver severely strain the disintoxicating function of the organ. No eholagogues should be administered. After a period of rest-and starvation for a few days seems a rational plan—the liver may be gently stimulated in the hope that it may be coaxed gradually to resume its functions. This should be attempted by the earefully graded administration of salicylates, of bile acids, possibly of ealomel; in addition, various dietetic and physical means may be adopted that we know to be capable of stimulating the various functions of the liver. All this treatment should be carried on with careful supervision and daily control of the effect of these measures on the functional activities of the liver, as evidenced by the composition of the stools and the urine and the general condition of the patient. The details of the various means mentioned and of the symptomatic evidences of the state of the liver function ean not be discussed within the narrow frame of this article. I content myself with establishing general principles. The treatment of the acute uremic attack is always an ungrateful task, for it is immaterial whether we are dealing with a disorder that is primarily or in its ultimate consequences

due to renal or hepatic or general metabolic insufficiency; in any case we are dealing with a terminal syndrome that is due to the crumbling of the whole cellular edifice. To arrest this collapse, essentially means to revive a dying organism. That this may occasionally be done for the time can not be denied; and as the recuperative powers of the human body border on the phenomenal no effort should be spared to bring an acutely uremic patient back to life.

"Of sweating, purging and the stimulation of the kidneys I have already spoken. The administration of liver stimulants by mouth seems hardly feasible, and I have never seen any good effects in uremia that I could fairly attribute to this practice. The most sensible procedure is blood-letting. This useful measure constitutes a lost art nowadays, and it is time that it should be revived; we are dealing in uremia with a toxemia (for no organic lesions that could explain uremia are discovered after death), and to eliminate some of the poisons that are present in the blood by bleeding is always indicated; whether the injection of a saline to replace the lost fluid is useful or necessary is not yet established; it can certainly do no harm, particularly if some saline is injected that can stimulate the hepatic function, e.g., salicylate of soda in normal salt, or a solution of sodium citrate or phosphate in appropriate molecular concentration. Symptomatically, the use of such infusions has been useful in my hands and has occasionally caused the most alarming symptoms of uremic attack to disappear when other measures, I think, would have failed."

DISCUSSION.

Dr. N. S. Davis:—I have been greatly interested in what Dr. Croftan has said, for the chemical facts which he has pointed out so well corroborate the view which, I believe, has been growing in the minds of many physicians for quite a long time; that is, that uremia is by no means due to functional inactivity of the kidney alone, but that the liver, probably more than any other one organ, plays a part in producing it, because that organ fails to prevent contamination of the general blood stream by toxins largely generated in the gastrointestinal tract; in other words, the kidneys are in part at fault, the liver is in part at fault, and simultaneously the gastrointestinal tract or its contents are at fault, and possibly general metabolism is perverted. This view has been, in a very imperfect way, voiced occasionally during the last dozen or fifteen years. Ten years ago, not as an original thought of my own, but the somewhat elaborated thought of others, I published an article in which I laid emphasis upon the fact that in the production of uremia and in the treatment of it we must bear in mind constantly the important corelation of faulty action of the gastrointestinal tract, of the liver and of the kidneys; therefore, although this idea is not new, many of the chemical facts upon which Dr. Croftan bases his theory are comparatively new, interesting and corroborative of clinical findings. Clinicians were first led to think of this corelation of the various organs in the production of uremic symptoms, because, first, it was observed many years ago and emphatically pointed out by Trousseau that the occurrence of nephritis in scarlet fever could almost uniformly be prevented by placing the scarlet-fever patient on a milk diet and maintaining it for some time after convalescence. Secondly, it became evident that in a great many cases of uremia (I refer to the uremic dementias, mild uremic intoxications and the severer cases of chronic uremia) the symptoms could be made to disappear with uniformity and with considerable rapidity if patients were prevented from eating for one, two or more days, as the individual case might require, and if at the same time the gastrointestinal canal was cleaned by catharsis. This treatment, of course, insured rest for the gastrointestinal tract, for the liver, and comparative rest for the kidneys. These are the facts which chiefly have led clinicians to feel their way toward the theory so well expressed by Dr. Croftan.

During the last few years my attention has been called to certain other clinical facts which, I think, have a relationship to these. The similarity of symptoms of uremia, of diabetic coma and of cholemia suggests similarity of origin. Childbearing women and those recently delivered of children are most liable to develop acute yellow atrophy of the liver which almost uniformly ends fatally with cholemic symptoms. In these cases there is also an acute fatty degeneration of the

kidneys. It has been pointed out, too, in very many cases in which there is no cholemia, in which there are no fatal results of hepatic origin, but still cases that are fatal for other reasons and that come to autopsy that there are frequently coincident degenerative changes in the liver and kidneys. These pathologic facts suggest, too, that there is an etiologic and pathologic relationship between cholemia and uremia. I doubt if there is much weight to be placed upon one point to which Dr. Croftan called attention, and that is to imperfect metabolism growing out of the failure of the kidneys to perform their vital filtering work properly. I doubt if there is any real relationship, for instance, between the production of a copious albuminuria and conditions which would lead to uremia. Uremia occurs quite as often, or oftener, in those cases in which there is little albuminuria—for instance, in cases of contracted kidney, and certainly in these it is not the escape of albumin from the blood which leads to imperfect metabolism so great as to produce the toxins of uremia.

In regard to the treatment, I agree entirely with Dr. Croftan as to the doubtful utility of sweating patients who are in an uremic condition, unless they are at the same time very dropsical and we are aiming to relieve the dropsy rather than to bring about elimination of poisons. In regard to the administration of water, I believe in administering it with a considerable degree of freedom, not alone for the purpose of forcing the kidneys to additional work, although this is important, and we can only accomplish it by giving water in sufficient amounts to prompt these organs; but it is also important to administer water to maintain functional activity of other glandular organs, and particularly of eliminative organs, like the liver. If we stop giving fluids we will not get copious secretion by the liver or other glandular organs. The excretory functions of the liver are all-important in preventing the production of the symptoms which we are discussing—uremic symptoms. Moreover, by the administration of fluid the poisons in the blood will be diluted. For these reasons it seems to me that the administration of water is important, although the cessation of the administration of food is equally or more important. If water is to be given, it should not be given in enormous quantities, but sufficient to maintain normal excretion from the various glandular organs, particularly from the kidneys and from the liver, providing these organs are healthy.

A word in regard to the diet. When it is safe to begin to feed a patient at all, only the blandest and simplest food should be given. I mean by that not only easily digested food, but food that is in its composition as uniformly the same as possible. You will remember, we have been taught recently that in the treatment of glycosuria, starch from a single source can oftentimes be given with perfect safety; as for instance, an oatmeal diet or potato diet, which can be established with real benefit to the patient; but it is not possible to give safely different kinds of starch or starch from different sources at the same time. All this points to the fact that foods of comparatively simple construction, or of very uniform composition and moderate amount, can be managed by damaged organs, whereas mixed foods can not be. Therefore it is all-important when we begin to feed patients who have been uremic to feed them upon one kind of food or upon a simple food. I believe this is the secret of the good effect of a milk diet, which has been used so long with undoubted benefit. Unfortunately, it can not be maintained long. In milk we have an easily digested, bland form of food, and where it is the only food we give a patient a very small quantity of nourishment. Of course, there is in milk sugar, albumin and fat. Strictly speaking, it contains a variety of nutritious ingredients, but at the same time they are from one source and uniform in composition.

Dr. James B. Herrick:—A few days ago Dr. Croftan asked me if I would not come down to the meeting and discuss his paper, and he urged me to pick all the flaws in it I could. There are certainly few faults that I can find with this excellent paper, and yet I have jotted down one or two facts that seem to me to warrant criticism. The first fault is that Dr. Croftan is too good a speaker: he talks too well. He is able to present these subjects so succinctly, so logically, so clearly that he makes obscure things seem to us as clear as daylight, and he leads us frequently to think that what he is discussing is fact when oftentimes, I believe, it is

theory. Much of what he has said to-night no one can criticize, yet a great deal of it is, after all, theory. I do not mean to criticize the presentation of a paper of this sort; it is something to which we are all pleased to listen; it is most suggestive and instructive; yet I feel that we ought to view these newer theories in a critical spirit and with a good deal of skeptieism. History often repeats itself. If we review the history of uremic theories it will teach us a great deal. We have only to go back sixty or seventy years to find that every few years a new theory as to uremia crops out. The first theory was that it was retained urea that produced the symptoms. Another was that the potassium salts were at fault. theory that there was a transformation of the urea into ammonium compounds and that this produced the uremia had back of it the authority of Frerichs. Then we have the theory of Bouehard that certain toxic substances which should be normally eliminated in the urine, and which he thought he could identify, were now retained. Another theory advanced was that the condition was due to faulty internal secretion; and still another, that it was due to the retention of some of the products of imperfect proteid metabolism. All these are theories that have had their day, and now we hear comparatively little of them, and so I say, while studying these newer theories we should give them due consideration, but still view them with a critically skeptical eye and not accept them at first hand. Dr. Croftan mentioned a very important fact that we must all admit is true, viz., anuria is not uremia. The mere shutting off of the urine experimentally in the lower animals or in a human being where the kidney is destroyed by operation or disease, produces symptoms far different from those of ordinary uremia. The coma, the cardiovascular changes are usually strikingly different, and yet, while that is true, there is, after all, I believe, something to the retention theory, and I am sure Dr. Croftan believes more or less in this and puts it into practice. While in some cases there are uremic symptoms in the strict sense—cerebral symptoms, cardiovascular changes, coma—there are other symptoms that are, in all probability, due to the shutting down of the work of the kidney. If there be in our cases of uremia, as we see them clinically, a mixture of these two phenomena, a point clearly brought out by some recent writers, then in our treatment we can not, I think, be guided wholly by the theory of faulty hepatic metabolism, and I for one would not want to give up, for the present at least, some of the older methods of treatment in a given case of uremia. Many of these cases have a scanty urine; we see the shutting down of the urine increasing day by day, with an aggravation of many of the symptoms, and if we find by practice, as many of us have, that by the ordinary methods—through the skin, through the intestines, and, I believe, to a limited extent through the damaged kidney—we can secure better elimination, it is our duty to treat along these lines.

With regard to the use of water, the ideas of von Noorden have permeated this country, and I believe he has done an immense amount of good in speaking to us about the practical therapeuties of diseases of the kidney, and I for one have practiced many of his ideas, and among them I have stopped on the use of unlimited amounts of water for patients with nephritis, chronic uremia and threatened uremic coma and convulsions. But even von Noorden wisely prescribes for his patients what he terms "flushing days." Once a week, or once in ten days, instead of the patient being allowed a quart and a half of water a day, he is given three or four or five quarts, and the elimination from the kidney, or the washing out of the kidney, is not without benefit. So, too, as to sweats, I agree with Dr. Croftan that their value is greatly overestimated; yet not infrequently I have seen improvement follow their use. Usually the sweats should be given at the same time that we give the patient an increased amount of water. I am speaking now of eases without dropsy; in eases with dropsy it is generally admitted that sweating does good. Leube has called attention quite forcibly to the fact that if we sweat patients without giving them water we are really concentrating the blood. As Dr. Croftan has said, very little of the toxic material gets out, and still some of it comes through the skin. Or we may give even the much-dreaded salt solution. I say dreaded salt solution because nowadays we hardly dare to give salt in a case

of nephritis. But this is apart from the question.

There is one other fact to which I wish to refer briefly, and that is this: In the treatment of our cases of uremia there are certain harmful mechanical or physical conditions that we can do something toward relieving. You will doubtless recall that Traube, some sixty years ago, stated that uremia was an edema; that uremic coma was an edema of the brain, with secondary circulatory changes, chiefly in the line of anemias. That theory has been proven to be untenable, and yet this is true: you will sometimes see patients in uremic coma, and if you make a lumbar puncture the cerebrospinal fluid escapes under greatly increased pressure. I saw this fluid just three or four days ago literally spurt for eight or ten inches. You can also get an increased amount of cerebrospinal fluid in many of those eases. The patient may, as I have seen, shortly after cerebrospinal fluid is withdrawn, be aroused to consciousness. This does not cure the disease, but it seems to me that it proves, after all, there is something to the pressure theory and the edema theory of coma, though we can not say that it gets at the root of the matter. We can temporarily, at least in some cases, improve the condition by the simple method of lumbar puncture.

Let me refer to another point right along this line. The cardiovascular changes are, of course, recognized as common occurrences, almost inevitable occurrenees, in certain forms of nephritis. We are all familiar with the small, hard pulse of high tension in contracted kidney. If such a pulse is present at the wrist it is presumably present in other parts of the body, as, for instance, in the brain. When a patient comes to us with such a pulse, when we take the pressure and find it up, perhaps over 200, it is our duty to try to relieve such pressure and the vascular spasm. That can be done, in a measure, by the use of the vaso-dilators, such as iodid, the nitrites, or nitroglycerin. When a patient comes to us with all the evidences of contracted kidney, including this high vascular tension, and when by the simple use of these remedies the blood pressure is reduced by thirty millimeters of mercury and the patient tells us for the first time in four weeks he has been free from headache, we feel, after all, there is something to the spasm of the vessel in the production of symptoms. And no matter what our theories with regard to the real causation of uremia may be, we must meet certain facts as they are; we should relieve pressure if we can; we should relieve spasm of the vessel.

I should question the statements made by Dr. Croftan and Dr. Davis as to the frequency with which there will be found distinct anatomic changes in the liver in cases of nephritis. Certainly in chronic disease of the kidney, where the process is of many years' duration, there is ample time for marked changes to have occurred in the liver. I doubt very much whether the records of pathologic institutes would show a striking number of cases with anatomic change in the liver that must almost necessarily be present if the liver were the primarily important organ

in the production of uremia.

A Member:—I agree with Dr. Croftan that in case of insufficient kidneys the liver takes their place in the performance of their function, and in cases of liver insufficiency the patient may present symptoms similar to those of uremia. If that is true, is it not possible that the retention of toxic material is the cause of the uremia? Recently, in eurrent medical literature, much has been written about the internal secretions of the kidneys and of the effect of the cytotoxins in causing uremia. Retention of toxic material, as Dr. Croftan has said, has not been proven to be the cause of uremia. It has been proven, I believe, that symptoms similar to those of uremia, have been produced in cases of anuria and in experimental nephrectomies when diphtheritic serum has been injected. I would like to ask Dr. Croftan whether he has come to any conclusion in reference to the nephrolysins and nephrotoxins being in any way responsible for the symptoms of uremia?

Dr. Croftan (closing the discussion):—I disagree with Dr. Herrick when he says that some of the ideas I expressed in regard to the eauses and the treatment of urcmia were largely theory. They were not theory. I do not think that they can be dignified with this name. They were merely hypothesis. I hope some day, however, that this hypothesis will attain the dignity of a theory. What I was trying to express was my dissatisfaction with the current uremia theories, notably with the almost universally accepted retention theory. I tried, by a critical re-

view of all the literature available and, in particular, of the chemical and clinical evidence that I could discover, and to which I modestly added some scanty studies of my own (scanty because the facilities in the hospitals I have so far been connected with are so utterly inadequate to enable exact work), to correlate as many facts that had a bearing upon the subject as possible and to make these facts the basis of certain conclusions. Upon this basis a very good working hypothesis can be constructed. It is to be hoped that more facts will be adduced to strengthen this structure and to render it broader and more stable. I sincerely believe that wremia is hardly ever due to the retention simply of excerementitious urinary bodies, and much more often, I might say generally, due to such conditions as hepatic insufficiency, general metabolic derangements or even gastrointestinal disorders, complicated, it is true, in most cases by renal insufficiency. I omitted reference to nephrolysins; this subject is still too uncertain.

I think it was Huxley who said that "a man who is afraid to leave the basis of established facts will never arrive at the absolute truth." It is well, therefore, occasionally to take an excursion into the air, and when called down again to alight as gracefully as possible; that is what I am trying to do. I was sorry that time did not permit me to go into the treatment as thoroughly as I would like to have done, because most of the discussion has been with reference to the treatment. I tried very hard to avoid non-essentials, and for the sake of clearness to content myself with establishing certain facts. I tried further to delineate as clearly as I could the indications for the treatment of uremia that could be evolved from these facts, for I felt that anybody could work out the details of treatment if he accepted

certain underlying principles and indications and was guided by them.

In regard to the treatment of the uremic attack I said very little, because I have never been so fortunate as to cure such an attack. Dr. Herrick has in his usual able, clear and concise manner described practically all the measures that can be and should be employed in combating this horrible, usually terminal syndrome. Thus we all agree with him in regard to the great importance of treating the cardiovascular phenomena, of promoting vicarious elimination through the various emunctories of the body, etc. But, nevertheless, these patients die, for in them we have a crumbling of the whole cellular edifice, and no power on earth can save them. That was one reason why I was so anxious to emphasize the work that the liver and the general metabolism play in the production of uremia, and why I tried to describe what might be called preuremic states; for in this condition, that is, relatively early in the disease, a great deal can be done toward preventing foudroyant uremia, provided the chief attention is directed toward the liver, the gastrointestinal tract, the general metabolism, and the renal idea is, relatively speaking, relegated to the background. In regard to the contention that changes in the liver would presumably not be found in most cases of kidney diseases that come to autopsy, even if the liver were examined carefully, as it certainly is not, I do not know what to say in rebuttal. We will simply have to wait and see. I hope that the ideas that have been voiced to-night may stimulate pathologists to study this phase of the question a little more thoroughly. If we invert the proposition, however, I believe that I can safely say that in fully 70 per cent. of the cases of gross liver lesions definite renal changes are recorded. The one great difficulty in discussing uremia is the vagueness and uncertainty of the phenomena that can be fitly grouped under the name of uremia; this applies particularly to preuremic states. Clinically this state is more or less indefinable, almost as much so as hysteria or the uric acid diathesis; for almost any symptom can be produced about the nervous system, the special senses, the cardiovascular apparatus, the digestive organs and the higher psychic centers by the complicated intoxication that underlies chronic uremia. Hepatic insufficiency, however, which presumably produces this complicated syndrome in many cases is a clean-cut entity and can be positively diagnosed, especially with the aid of certain urinary and fecal evidence that, unfortunately, the limit of time at my disposal does not enable me to discuss.

In conclusion I wish to emphasize the great importance of recognizing hepatic insufficiency, or preuremic states, in every case that submits to an operation. Surgeons usually test the functional powers of the kidneys before administering an anesthetic. It is just as important, possibly more so, for them to in-

vestigate the state of the liver function, especially as regards the choice of an anesthetic. I believe that many of the postoperative accidents that are variously classed under the names of shock, heart failure, renal inadequacy, etc., are really due to a condition of acute hepatic insufficiency following the use of chloroform, a state that in its clinical manifestations is almost indistinguishable from an acute uremic attack. I call attention in this connection to the very interesting and suggestive recent case report of Drs. Bevan and Favill, in which chloroform produced anatomic and clinical changes in the patient that resembled acute yellow atrophy of the liver. Wherever evidence of hepatic insufficiency is found, chloroform should be administered with the greatest care; and in addition the possibility of profuse capillary hemorrhage should be considered, for in hepatic insufficiency there is a distinct hemorrhagic tendency, which may possibly be due to the presence of an excess of bile acids in the blood, for the latter produces hemolysis and interferes with the coagulability of the blood. Finally, I have been asked how it is that in advanced stages of hepatic insufficiency—that is, in cholemia—there is rarely jaundice. The answer to this is simple: The liver cells in this condition are so thoroughly unable to perform their functions that the manufacture of bile pigments practically ceases, and when no bile pigments are formed none of them can naturally be absorbed into the blood, and hence no icterus is produced.

FAREWELL ADDRESS OF DOCTOR DAVID DOHERTY,

AT THE BANQUET GIVEN HIM BY THE CHICAGO MEDICAL SOCIETY, FEB. 17, 1906, ON THE OCCASION OF HIS DEPARTURE FOR THE PHILIPPINES.

Mr. President and Gentlemen:—When I first read in the Society's Bulletin (too late to prevent it) the announcement of this great honor you do me, I was indeed surprised. Had you stopped with the touching words of praise which the President was pleased to use in making that announcement, you would have rewarded me far beyond my deserts. The question, Why are they doing it? haunted my mind until finally I found a solution. I decided that this testimonial was not only a reward of one of your workmen, but it was itself an evidence and a product of the new spirit of activity and mutual co-operation that has within the past five or six years taken possession of the Chicago Medical Society, until it has overflowed into the entire profession of the city. Recognizing, then, the fact that other men have worked more than I, as soldiers of the common good (and you can hardly conceive the amount of detail work done by your Committees on Organization, Membership, Medicolegal Affairs, etc.), and believing that I rather than another am the recipient of such marked honor simply because I am about to leave the city, I feel that I may accept your tribute and I thank you profoundly for it.

Those of you who have read Jack London's "Call of the Wild" will remember the two dogs, types of character that he portrays: Buck, who ever strove for the mastery, who ever assailed and tore down every rival, and old Dave, who worked steadily and faithfully in his place and who, when finally, on account of his infirmities, cut out of the traces, strove to crawl back that he might die at his work. I have always preferred old Dave (my friend Dr. Banga would say, "Nomen est omen"), and it has always seemed to me that man can have no better ideal than to work faithfully and to die in the harness working.

I owe it to your great kindness to me to gratify a natural and friendly curiosity which you may have in regard to the undertaking upon which I am about to embark. I plead guilty to having within my bosom a wander lust, perhaps inherited, for the Gaels were ever wanderers. It may be that my recent reading of the interesting travels of our friend, Dr. Senn, who honors me by his presence here tonight, awakened my dormant wander lust. Like the doctor, I am a good traveler and I enjoy keenly sliding along the tilting deck. I escape the two vexatious annoyances of travelers which he mentions, for I never get seasick, and I sleep so soundly and snore so sturdily that I am never disturbed by what others may do.

Certain it is, gentlemen, that there is something fascinating about the mys-

terious Orient. One who has been there is as if bitten by a tarantula; there is a vague madness in his blood. Waking or sleeping the poet's refrain sweeps through his soul:

"I am fretted with the sunset,
 I am weary of the bay,
For the wander-thirst is on me
 And my heart is in Cathay.
There's a schooner in the offing,
 Her top sails touched with fire,
And my soul has gone aboard her
 For the Islands of Desire."

We "hear the East a-callin'," not because beyond Suez "there are no ten commandments and a man can raise a thirst," but because when one has once seen those dense masses of humanity, writhing and struggling like a huge mass of worms to get air and sunshine, his soul recoils at the thought that all life is "but the murmur of gnats in the gleam of a million million suns," and there awakens within him a feeling of brotherhood that is dormant in every human soul—a consciousness that we are our brothers' keepers and a divine desire to carry comfort and help to them. That is the spirit that animates our missionaries. I would fain believe that even in this mercenary age our commercialism is animated by the desire to help those peoples to better living, and I am sure that that is the spirit which has carried our flag to the Orient.

As to myself, the simple story is that I go to the Philippines to pursue certain economic and linguistic studies. I am not lured by visions of heroic deeds or thrilling adventures, but I look forward to drudging, unpoetic work. I hope to publish a Filipino-English dictionary, at which I have been working for some · years past. Further, and much more important, I hope to issue a fusion speller or primer as a step toward the formation of a common vernacular specch. When we first acquired the Philippines it was said that we had to deal with 80 tribes and 120 dialects, or 120 tribes and 80 dialects, I don't know which. Later on we learned that the Filipinos are really a homogeneous people who have seven dialects, not more widely variant than the Saxon and Bavarian dialects of Germany. Unfortunately they have no common vernacular speech, which would be very helpful for their educational work, for their coming legislation and, in general, for their national unity. As to the economic studies, one example will suffice. In its recent report the Philippine Commission states that the Filipinos exhibit no alacrity in taking up the public lands under the new homestead laws. It is my purpose to learn why this is so and, as far as I can, to create a more self-helping spirit among my Filipino friends, and they are all my friends.

As to the so-called Philippine problem, I am most optimistic as to its successful and rapid solution. I base my strong hope, first of all, on the justice and spirit of fair play which characterizes the American people. We would as little deprive any people of whatever natural rights they are capable of exercising as a gentleman would be capable of robbing a child of its pennies. Further, I base it on the fine educational work that is being done among and by the Filipinos. There are at this moment about 250 Filipino young men studying in this country the learned professions, for 172 of whom the Filipino people are paying, through the commission. Besides, there are about 400,000 children in the public schools of the islands.

Now, gentlemen, I have been speaking perhaps too much about myself. In all propriety I ought to close my remarks now, and yet it seems that I should say something with reference to our society and to the profession. Therefore I crave your patience a while longer. We have reason, gentlemen, to be proud of the Chicago Medical Society. It is, perhaps, the largest medical society to be found in any city of the world, and nowhere else can be found such a spirit of harmony and good fellowship, such activity and self-sacrifice in work and such fidelity to the best ideals of the profession. There are three things that I have been especially interested in: 1. The reserve fund. If you really desire to gratify me, promise (hands up, gentlemen) that you will not break into that fund until I come back to get a share of the loot. 2. The public lecture course. This is an assured success,

doing much good and capable of being amplified so as to do very much greater good. To-night is lecture night, and it might be a good thing if we would now adjourn and attend the lecture in a body. 3. The State medical journal. Never forget, gentlemen, that we are to conduct The Journal as trustees for the State Society. It belongs to the State Society and must always belong to it. It must be conducted in the interests of that organization. Let it be scientific indeed, but not above the heads of the general practitioners, and let it aim to spread from end to end of the State of Illinois the same active and fraternal spirit that animates this local branch of the State Society. I have heard it said that country journalism is characterized by the prominence it gives to unimportant personal details. I confess I always enjoy reading the columns of personal items. I sympathize with the man whose buggy has been smashed by his runaway horse. for I had just that experience, and I rejoice with the doctor who has succeeded in building a new house. Don't you think that when I shall be far away in the Philippines, and perhaps heart-sick for Chicago and my medical brothers, I shall read with redoubled interest these personal items? If, perchance, I read that one of you has got married, in fancy I shall hear the chorus of all the bachelor doctors shouting "lucky fellow," and the married men cchoing (but not so loud) "poor fellow"; and if any of you should die, which God forbid, I shall feel, "Oh, if I were again the society's necrologist what a sendoff I would give him!" And if it is noted that Dr. Doherty has gone to the Philippines, my lonesome heart may feel my best friends saying, "The chump, he didn't know when he was well off." Gentlemen, love your society, stick to it, work for it, for it is a potent instrument, not only for protecting your material interests, but for realizing your professional ideals. Finally, in regard to the profession of medicine, it has so often and so justly been the theme of pancgyrists that I need not eulogize it to the extent of my high opinion of it, lest this gathering should become merely a mutual admiration meeting. It is, however, permissible to say that in it are found the finest ideals of the human soul, ideals that dignify manhood and that can clothe with the splendor of a king even the rags of a beggar. These are humanity and scientific truth. It is by virtue of its ideals that medicine is a profession and not a trade. In proportion as we lose sight of them we shall sink to the level of mere hucksters, and, facilis descensus Averni, it is but a logical step further to creating a demand for our services. That would be treason to the human race. What a monstrosity would that doctor be who looks only or chiefly at the money side of medicine, who, in the words of Thomas Paine, "hunts after the mammon of this world with a step as steady as Time and an appetite as keen as death." He will end by wearing his profession as a highwayman wears his mask. There is, gentlemen, no refuge from the degrading abyss of commercialism save in the contemplation and the pursuit of the ideals of medicine. There is another thing about these ideals. They are not dreams of poets nor metaphors of rhetoricians, but realities founded on conviction; and conviction is the most potent stimulant to action and results. A minister might resign his ministry because he can not be sure that he can save a man's soul, but a physician is sure that he can help, possibly can save a man's body; and, though he must still recognize the limitations of his power, his conviction trembles not, for he has before him the beckoning wand. the increasing light of advancing scientific knowledge.

Now I take it that virtue is merely habitual striving after worthy ideals. In speaking of the virtues that become a physician I do not refer to the homely and civic ones which belong to every good citizen and every decent man, which are the monopoly of no individual but the common heritage or common duty of all mankind. Neither do I refer to the heroic virtues. Both these classes of virtues belong to the individual, not to the profession as such, but I do not hesitate to aver that, with the exception of the military, no profession furnishes as large a percentage of individuals capable of heroic virtue as does the medical profession. There lingers in my memory one case of heroic self-sacrifice which made a strong impression on my life. When I was a boy in my teens the church which my parents attended had as sexton a man about 30 years old, who had a wife and two children. He was poor but ambitious, and he began the study of medicine in the intervals of

his regular work. The whole congregation was interested in his undertaking, and in due time he graduated. That was about two years after the close of the civil war. Hardly had he obtained his diploma when an epidemic of yellow fever broke out in the South and swept north as far as Memphis, causing great mortality and vast suffering. Calls were issued for nurses and doctors to go to stricken Memphis. What were the immediate motives of our sexton-doctor I know not. Perhaps he meant to acquire experience, to gain reputation, to earn money. I do not know. But this I know: he volunteered and within one week of his arrival in the plague city he fell a victim to the disease. All his hopes vanished, all his ambitions dismantled and his wife and helpless children left to the chances of a selfish world—if there is no God of the fatherless to have care for them. Forty years have passed, his name and fate have perhaps been utterly forgotten save by the thoughtful boy who, himself now old, pays his tribute to the memory of a doctor who gave his life for his fellow men. I have often thought of him, and the lesson I learned from him is that contained in the words of the Master: "Work ye whilst the day shineth, for the night soon cometh, when no man can work." The professional virtues, those that become a physician, are these: human sympathy, love of study and fraternal spirit. Of these, the first and chief is human sympathy. It is the core, the heart, the very soul of medicine. No other profession, not even the clerical, should be so permeated with it. I will narrate three incidents to exemplify the presence or absence of this most necessary virtue. About fifteen years ago a physician of considerable repute was speaking to me of a certain needy patient. He said: "I do not take such cases any more, because there is no longer either money or reputation for me in them." He had the wrong spirit, because he lacked human sympathy. Since that time he has been disappointed in some of his inedical ambitions. And why? Because the spirit that caused those words showed itself in other ways also and forfeited him the support of his fellows. Again, I stood at the side of a surgeon in the operating room. As he took up the knife he said: "I fear this case will spoil my statistics, but it is my duty to operate." That was the right spirit; he put his duty to the patient above his own reputation. Finally, my collector told me of a case that recently happened. Of course, medicine has a business side which we can not ignore, because we also must live; sometimes the res angusta domi forces us into being strict, but oftener we find it difficult to control the process of collection after we have started the machinery by placing our bill in an agent's hands. At any rate, in the case I have in mind judgment was obtained against the debtor and the constable proceeded to levy. As soon as the doctor was told of it he drove to the place, paid the constable his fees and dismissed him and handed a receipted bill to the debtor. I do not know the doctor personally, but I certainly honor him, for he showed the right spirit. His human sympathy could not tolerate such extreme measures.

Now, gentlemen, perhaps I am going into too deep water in what I am about to say, but it lies upon me to say it, for I am 56 years old, tengo cabeza, as the Filipinos say, and I have convictions. I am convinced that the only enduring basis for human sympathy is religious mindedness. I do not, of course, mean church membership. That is a matter for the individual conscience; but religious mindedness pertains to the professional conscience. I mean by it the recognition of something beyond matter, the acceptance of a morality that is not materialistic, if such a thing as materialistic morality can exist. Too often the medical profession is charged with materialism, because the dissecting scalpel discovers no spirit. Just a fortnight ago I had occasion to meet a woman whose 15-year-old son had died shortly before. Her grief was almost irrational. Her blue eyes actually blazed as she said to me: "I hate God, I hate the doctors. I hate all men!" And she laughed scornfully as she said: "You doctors do not believe in a God. do you?" For myself I was able to answer, "I certainly do," and I tried to assuage her grief by such words of comfort as I could command. But the incident set me thinking, and this is what I thought out: unless the physician occupy a high moral plane outside of materialism he should not be entrusted with the great, the almost God-like power he has over life and death. Think of the awful responsibility that rests upon him! A callons clod must be be, indeed, who can view the passing away of a human being without a thrill of awe. When we contemplate what death means to its victim and much more to the beloved ones whom he leaves behind, how painstaking, how conservative, how sure should be the man upon whose word rests the course of treatment, the performance of an operation that means life or death. I do not urge this reflection as an argument, because a materialist may, perhaps, have such a sense of responsibility. But the two reasons that have kept me from materialism and that lead me to assert that a physician should not be and logically can not be a materialist are these:

First—I have said that human sympathy is the essence of the art of medicine, without which it will degenerate into a base traffic. Now if all is matter, if the maimed and suffering among our fellow men are mere chips to be cast aside, why have sympathy? It is pure waste. Pity is no longer either an emotion or a motive, and the physician becomes a pitiless machine, just as his patient is a mere

block. Materialism stifles the very life of medicine.

Second—Etiology is, perhaps, the chief principle of the science of medicine. We look for the cause of disease in order to prevent disease, and we look for it in order that by removing it we may cure disease. Yet etiology, the sequence of cause and effect, is the principal argument for deism, for the recognition of a power outside of matter. I leave it to theologians to thrash out to what extent such recognition means a personal God, and I am content now to record my protest against medicine being classed as materialistic.

The second virtue that becomes a doctor is love of study. His studies should be concerned chiefly with matters pertaining to his profession and his best book should be his medical society. However, it is legitimate to make excursions into other subjects. That relieves tension and preserves balance. Such side issues should not overshadow his profession, and in this respect I have perhaps deeply sinned, for I have been almost swept from my moorings, almost divorced from my legitimate mistress, medicine, by non-medical study and work. Therefore on this point I am a poor preacher. But I can at least insist that whatever we do or study outside of our profession should be worthy of a man. Along in the 70's I knew a promising artist, who told me that he deliberately went on an occasional debauch because the reaction from it gave him choicer inspiration and clearer vision. He was able to do better work in the period of reaction. What folly! He beastialized himself in order that repentance might make him feel angelic. Is it any wonder that he ruined his career, that his evil became a habit more quickly than his good, and that both his name and his work have disappeared? Let, then, all that we do or study inside and outside of our profession be worthy of men.

The third virtue of a physician should be a fraternal spirit. This may be considered with regard to the profession at large or with regard to the individual member. In its first aspect the fraternal spirit of the profession is safe in the keeping of the national organization. This was evident to me as I listened at the last meeting of our society to the papers by the secretary of the American Medical Association and by others. I felt proud to realize to what a great extent Chicago is the focus and distributing point where so much energy is accumulated and so much influence is distributed for the benefit of the profession at large. But it is in contact with individuals in the competition of daily life that a doctor's fraternal spirit is most severely tested. In that sphere the rivalry, the jealousy, the bickering (usually petty) that belong to selfishness are apt to undermine this most necessary virtue. Two considerations will help us to be strong. First, it is legitimate to desire and strive for success. But what is success? One thing is sure: it need not involve the injury or ruin of a fellow practitioner; it should not trample upon the rights of another man. You may cry "Excelsior!" in the teeth of the mountain, you may plant your standard upon its very peak, to be known and spoken of by all men, but as long as that trodden fellow being, by whose downfall you have climbed, lies at the mountain's base there is no honest success. Neither your own conscience nor the judgment of your fellows will give you plaudits. I know that some say that life is a strife. I deny it. Life is growth, and Nature and Nature's God meant opportunity to grow to be as free and fair for all as air and sunshine. The second consideration is that justice is a fundamental obligation to the human soul and that justice must mean taking everything into consideration—a man's environment, his handicaps and, above all, his motives. Hence it must lead to gentleness and not severity. The man who deals with a competitor in that spirit of justice will never trample upon him. When I look back over the years of my medical practice, perhaps the only bitter recollection I have is of the early years when I was sometimes supplanted in the care of a case, either unfairly or unnicely, by some older, abler or better known practitioner. The case meant only a dollar more to the other man, but oh, how much more than a dollar less it meant for me, for it meant, perhaps, an injured reputation, or at any rate discouragement. Hence I plead with the older practitioners to be generous with the younger man in the profession, and to set no other limit to their generosity than the safety of the patient, or, as occasionally may happen, their own need. In justice I add that, as a rule, Chicago physicians do exhibit a spirit of fair play and generosity toward one another that is most commendable.

Gentlemen, it is easy to preach virtue and difficult to practice it. Society is such an intricate machine and makes so many demands upon us for work that we find but little time to take thought, and so we gradually become part of the complex machinery, sordid, mechanical, unspiritual. It may not be amiss, therefore, to mention two simple helps that will bring us back to ourselves. Every doctor should have some vade mecum or favorite book which he may dip into in moments of leisure. I mean such books as Xenophen's Memorabilia of Socrates, Epictitus, or Sir Thomas Brown's Religio Medici. This latter, written by a physician in the early part of the seventeenth century, has always been a favorite with me, and I shall take pleasure in sending to each of you a copy as a souvenir of this occasion. Such books of moral aphorisms are small in compass but large in contents. They will soothe the tired spirit and arouse the discouraged heart. They will keep you human in sympathy and sane in philosophy. Listen to these reflections from Dr. Browne's Letter to a Friend: "Be substantially great in thyself and more than thou appearest to others. Increase not thyself by thy nooning shadow, but by the length of thy grave. If thou must needs reign, be Zeno's king and enjoy that empire which every man gives himself." When the world goes wrong with us, such thoughts bring comfort and courage to a man. The second help I have in mind is the Code of Eethics. It is the custom of this society to give a copy to every new member. It can not be too widely distributed or too frequently read. There is no man here, no man in the entire profession, but will get new light, new inspiration, new courage from its perusal.

In conclusion, gentlemen, there remains only for me to bid you farewell, to tell you how high I value your friendship, how proud I am to be a member of this society, how profoundly moved I am by the touching sentiments you have recorded in the magnificent book that you give me. May every success and blessing accompany the society and you individually, and may we all continue to work as soldiers of the common good for knowledge and for fellow man.

MORGAN COUNTY.

The Morgan County Medical Society met in regular session Feb. 8, 1906, at the Colonial Inn, in Jacksonville, at 7 p. m., with Vice-President A. L. Adams in the chair. The occasion was made memorable by the presence of Dr. Geo. H. Simmons of Chicago, in whose honor a banquet had been prepared. Among visiting physicians were representatives from Sangamon, Peoria, Cass, Pike, Scott, Jersey and Macoupin Counties. During the afternoon a number of physicians visited the Illinois Institution for the Blind, where the work of various departments was reviewed under the direction of the Superintendent, Captain Freeman. Mrs. Jordan exhibited the work of her remarkable little blind-deaf-mute pupil, Emma Kubechek. Following this was a visit to the Central Hospital for the Insane, which occupied the remainder of the afternoon.

Following the banquet at the Colonial Inn, the admirable address of Dr. Simmons, on the subject of nostrums, was the main feature of the evening. The underlying thought of the speaker was that the members of the medical profession allow themselves to be imposed on by

unprincipled and skillful advertisers of "proprietary remedies" in the same way and to the same extent that the laity are deceived by venders of the so-called "patent medicines." The address was in no way a remonstrance against alcoholic or poisonous drugs sold direct to the patient, such as is being urged by certain lay journals, but a wholesome, kindly illuminating protest against the practice of physicians allowing themselves to be blinded by the absurd claim of so-called "chemical companies," and led to prescribe ordinary drugs in unknown combinations, under fanciful names and at exorbitant prices, often in "original packages," which can be duplicated by the patient at cut rates on the bargain counter of department stores. The address was strictly on "ethical preparations," "for physicians only."

The address was followed by an interesting discussion of the subject, in which many present participated.

David W. Reid, Secretary.

PEORIA COUNTY.

PEORIA CITY MEDICAL SOCIETY.

The last meeting of the Peoria City Medical Society was held in their rooms in the Observatory Building, Tuesday evening, Jan. 16, 1906, with R. A. Kerr, President, in the chair. The roll call found the following members present: Kerr, Stephenson, S. M. Miller, Kanne, Will, Marcy, J. S. Miller, Brobst, Gelder, Weber, Baeon, Floyd, Whitten, Allison, Sutton, Waln, Roberts, Hanna, Limmer, Collins, E. L. Davis, Plummer, Horwitz, and with two invited guests. Major and Parker. S. M. Miller read a very interesting paper on Exophthalmic Goitre, saying, in part:

Whatever theory we adopt as to the causation of exophthalmic goitre, we are sure that the symptoms are due to a hyperthyroidization, i. e., an excess of the internal secretion of the thyroid gland, which acts as a toxin. If the thyroid gland secretion is produced in too small quantities, the counterpart of Graves' disease is induced, which seems to be due to an excess of antithyroid substance. In order that the health be maintained, an exact balance between these two substances is necessary. An unneutralized excess of either is a source of intoxication. It is possible that there may be slight degrees of excess of thyroid substance unneutralized, so moderate as not to give rise to the pronounced symptoms of Graves' disease. Many puzzling cases, characterized by neuralgias, palpitation, hysterical and neurasthenic symptoms, may possibly be of such a nature. It will be well to bear this in mind, and to scrutinize these cases carefully. Various attempts to obtain the antibodies, which normally neutralize the thyroid secretion, have been made, with the hope that they might prove of benefit in cases of exophthalmic goitre, by neutralizing the excess. The thyroid gland of animals has been removed, and the blood serum, the dried blood, or the milk has been used, after the anti-thyroid substance has accumulated sufficiently to give rise to symptoms of myxedema. Altogether 43 cases so treated have been reported, the results have been remarkably uniform, all observers reporting their cases improved and cured. None have died, and very few failures are reported. The results compare well with those of other methods of treatment. However, the serum therapy is new, and we must remember that its exponents are apt to be enthusiastic. It seems to be worth further trials. I am using the preparation thyroidectin in the treatment of two cases. Thyroidectin consists of the dried blood of thyroidectomized animals. In one case, the improvement has been marked from the inception of treatment, with marked reduction of pulse rate, and amelioration of the symptoms, nervousness, palpitation, tremor, etc. I have also used the xray in this case; the Mayos reporting a series of ten cases so treated with marked benefit. There is some improvement in the second case, but it is less marked. However, the environment is less favorable.

DISCUSSION.

Dr. E. M. Sutton:—The treatment of exophthalmic goitre should be in accord with the eause of the symptoms, since cures occur under many different methods

of medication, including mental suggestion. I believe the surgical treatment is the best method of dealing with the disease. Based upon the theory of hyperthyroidization, the removal of a part of the structure secreting thyroidin seems the most rational. Medical treatment should precede surgical intervention in every ease, eare being taken, should an operation have to be performed, that the period of comparative safety be not allowed to pass by, and the operative dangers be thereby made much greater. I do not permit these patients to walk about while undergoing treatment. They are siek and unable to work at anything with success. They should be put to bed and any treatment instituted which will relieve the symptoms. Bromids, atropin, ice bag over the heart, and eathartics are of value, and in two of our cases, where marked congestion of the liver was present, iodin counter irritation was used. When the symptoms are relieved, which sometimes requires two or three weeks, the operation is undertaken. The use of animal extracts has not been found necessary in our cases, which number three in the past year, two of which belonged to the class generally considered unfavorable for operation. Recoveries were complete and prompt. Providing that the operation is earefully conducted, the mortality is low, 1½ to 4 per cent., depending upon the condition of the heart and the strength of the patient. Rough handling of the gland produces considerable shock, and to this rather than hyperthyroidization, the result of squeezing the gland, is due the alarming symptoms which sometimes follow the operation.

It is always best to drain these eases to prevent absorption of gland exudate. In one ease where the drain was removed at the end of twenty-four hours severe exaggeration of the symptoms returned, but were relieved by open wound treatment and symptomatic medication. Injury of the recurrent laryngeal nerve, when only one nerve is affecteed, may not prove permanent in effect upon the voice, a huskiness lasting a few weeks or months, gradually clearing up. This happened in one of our eases, the nerve being eaught in a bite of the forceps applied to the inferior thyroid vessels. Infiltration of salt solution, supplemented by a few inhalations of ether, is the method used to relieve the pain of operation. As to the comparative value of surgical or medical treatment, one can decide only by the trial, but under medical recovery, it must be remembered that the disease still remains latent.

Dr. E. E. Gelder:—As Dr. Miller confined himself to the treatment of this condition he made no mention of the relation of the sexual organs to functional diseases of the thyroid gland; but, as a matter of diagnosis of one of the cases he reported, which had only two of the cardinal symptoms. I think it well to bear this relation in mind. Doubtless all of us have seen young women who presented three of the symptoms of Graves' disease, though they did not have this affection, i. e., tachycardia, a fine fibrillary tremor and moderate enlargement of the thyroid. It is often possible to get a history which shows its relation to the sexual life of the patient. They are evidently not cases for surgical treatment and a prescription of sod, bromid, tr. nux vom., and tr. digitalis, has always benefited my cases of this kind.

Dr. Floyd:—Had not noticed that patients suffering from this disease usually came from families with a distinct neurotic taint. He had seen one case where the mother had Graves' disease and three of her sons developed it about the age of eighteen and, after being troubled for about three years, recovered, except the last one to have it, who is now about twenty. In regard to the theory of the sympathetic nervous system being the cause, while autopsies usually showed it to be affected, it was impossible for it to be the cause of the three cardinal symptoms, viz., enlarged gland, exophthalmus and rapid heart. An irritation of the eervical sympathetic nerve would eause the rapid heart and possibly the exophthalmus, but the blood vessels in the thyroid gland would be constricted rather than dilated, while a paralysis of the cervical sympathetic nerve would give the dilated vessels in the thyroid gland and possibly the exophthalmus, but the other eye symptoms and the tachycardia would be absent. He believed that the overactive thyroid gland was the original cause and its secretion a toxin and so produced the other eye and heart symptoms. He had used thyroideetin for somemonths on one case and has found no appreciable benefit. He noticed its depressing effect on the heart in large doses and has also seen it cause an intense pruritis and drying of the skin. He has used thymus extract on three well marked cases and has witnessed an immediate and pronounced relief, in all the symptoms. Having used potassium iodid on one case it produced an increase in all the symptoms and nearly caused the death of the patient. Belladonna had never done any good in his experience. He once used atropin by introducing it into the thyroid gland. It produced all the constitutional symptoms, but patient was not improved. While theoretically thyroidectin was the proper thing to try in every case he found better results from the use of thymus extract.

Dr. Miller, in closing:—In reply to Dr. Roberts' query, as to how a diagnosis was made in the second case in the absence of the enlarged gland: the enlargement of the gland is not necessary to make the diagnosis. The presence of two of the cardinal symptoms, tachycardia and tremor, with the numerous minor symptoms, makes the diagnosis of exophthalmic goitre without question. In the first case that I related, in which the retrosternal dullness indicated an enlargement of the thyroid gland, if Dr. Sutfon had operated, as he advocated, the chances are that the patient would not have survived the operation. Enlarged thymus gland is associated with the lymphatic constitution, and in these conditions, sudden death during operation is frequently observed. These patients stand operation poorly, and operation is to be scrupulously avoided. The necessity of vigilance in detecting these cases before, and not after operation, and the avoidance of operative procedures upon them can not be sufficiently emphasized.

The Society is looking forward to the next meeting with considerable pleasure in hearing L. C. Taylor of Springfield, Ill., who is to read a paper on "Myocarditis."

ST. CLAIR COUNTY.

The regular quarterly meeting of the St. Clair County Medical Society was held at Priester's Park on Thursday, Jan. 4, 1906, with Dr. W. E. Wiatt, president, in the chair, and C. W. Lillie, secretary pro tempore, and Members Rayhill, Sloey, Campbell, Rendleman, Auten, Irwin, West, Kercher, and Spannagel present; also visitors Dr. Carroll Smith and Dr. Walter Wilhelmj, of East St. Louis.

Called to order; reading of minutes dispensed with because of absence of recording secretary.

Dr. Auten presented some tonsils which he had removed by complete enucleation of the gland in its capsule without injury to the latter, and described the process. He recommends that the removal of the tonsils be done by that method, as it leaves no nucleus for subsequent growth and inflammation. The use of the tonsillitome is condemned; removal of a portion of the tonsil does not result in contraction of the remainder. Dr. Auten employs a 25 per cent. to a 33 per cent. solution of cocain as a local anesthetic, and has never had any bad results from the use of the strong solution; thinks an advantage is gained because of the rapidity with which anesthesia is secured. Dr. Auten thinks the best results from this tonsillectomy are found in children who have impaired hearing because of the enlarged tonsils; operation generally resulting in improvement of that faculty. The most dangerous tonsils are not the large ones, but those which are small or partially submerged.

Dr. Auten reported a case of mastoid disease which developed quite suddenly with severe symptoms which called for operative interference. On operation no pus was found in the mastoid cells, but on cutting away the thin plate of bone over the sigmoid sinus as much as half an ounce of pus was found; the sinus was filled with a plug of partly decomposed blood clot, of very offensive character; part of this was removed, and the cavity packed with sterile gauze; the temperature fell, but again rose; the cavity was opened, and the plug in the sinus broken up; hemorrhage followed, but this was controlled by pressure, and the cavity again packed; temperature again fell, and at the time of the report there is every prospect of recovery.

Dr. Rayhill reported a case of gunshot injury in a 10-year-old boy. The ball, a 22-caliber, entered the base of the skull about half an inch to the right of the right lateral sinus. When seen about an hour after the accident no signs of shock were present; the boy was conscious. He was sent to the hospital where no change was observed till five days later, when his temperature rose to 104 F., and slight convulsive movements were observed. The skull was then trephined and some small spicula of bone were removed. There was some inflammation at the wound of entrance, the meninges showing signs of infection. The ball was not sought. The condition did not improve, and the boy died from meningitis about thirty-six hours later.

The case of J. Harvey Moore, an itinerant who had been prosecuted by the prosecuting attorney for obtaining money from a blind man under false pretenses, was reported by Dr. Auten. The defendant, on his own admissions, convicted himself of fraud, but, as he refunded \$100 of the \$150 he had received, and signed an agreement to leave the state, the prosecution was dropped.

Dr. Walter Wilhelmj and Dr. Carroll Smith, of East St. Louis, were elected to

membership.

Adjourned to meet the first Thursday in April.

VERMILION COUNTY.

The Vermilion County Medical Society met in Danville, Feb. 12, 1906. Minutes of January meeting read and approved. The name of J. H. McIntosh was presented, reported on favorably by censors, followed by his election. The essayists of the evening not being present Robert McCaughey of Hoopeston opened a discussion on hepatic insufficiency, by saying he thought the title badly chosen, as meaning very little, but he supposed the essayist would have in mind, were he present, inhibited secretion of bile. He went into a scientific discussion of the chemical functions of the liver, which was exceedingly profitable as well as interesting. The essayist who was to discuss autointoxication not being present, a discussion of the subject was taken up by A. M. Miller of Danville, who went into a lengthy exposition of the chemistry of autointoxication, with an application of the principles as worked out by some of our research men, as well as his own observations. J. G. Fisher of Catlin made a clever application of the principles of autointoxication, which added greatly to the interest.

Adjourned. E. E. Clark, Secretary.

WILL COUNTY.

The regular meeting of the Will County Medical Society was held in the Public Library, Tuesday evening, Feb. 6, 1906. The program was as follows: Paper, "Frenzied Therapeutics," Dr. Watson H. Curtis, of Wilmington. The speaker discussed the many drugs and other therapeutic measures advocated and used without reasons or results in pneumonia. The discussion was led by Dr. Dougall. Paper, "Proprietary Nostrums," Dr. Harry A. Patterson, Joliet, discussed by Drs. Jump, Dougall, Van Hoosen and Bowles. Paper, "Surgical Mortality," Dr. Bertha Van Hoosen, Chicago. The preparation for operation and the postoperative care were described in detail. The newer anesthetics were discussed and deductions from a large number of cases in which nitrous oxid or scopolamin-morphin was used show to the speaker the superiority of these anesthetics over the old anesthetics. Discussed by Drs. Dougall, Lennon and Nash.

Members present: Drs. Nash, Williamson, Dougall, Patterson, Lennon, Leach, Eldredge, Fisher, Munch, McGann, Curtis, Jump, McClannahan, Bowles. Visitors: Drs. Couley, Manhattan and Bertha Van Hoosen of Chicago. Adjourned.

MARION K. BOWLES, Secretary.

INFANTILE PEMPHIGUS,*

V. J. Cohenour, M.D.

JOLIET, ILL.

Pemphigus is an acute or chronic bullous discase, characterized by the formation of numerons irregularly scattered, variously sized oval blebs, arising from apparently normal or moderately reddened skin; and which may be accompanied by mild or severe constitutional disturbance. Six varieties are mentioned by more recent dermatologists, viz: acute, chronic, foliaceus, vegetans, vulgaris, and neonatorum. Pemphigus neonatorum occurs in the new-born a few days after birth.

Etiology.—True pemphigus is not due to syphilis and is not hereditary. It is often thought to be caused by functional or organic derangement of the nervous system. Epidemics are reported of infection from the navel by careless midwives, also from infective lochia and wounds. Pemphigus has followed rheumatic fever and diphtheria. Unhygienic surroundings are also contributory. Staphylococcus aureus and albus, as well as a diplococcus are found in the serosanguinous contents of the bullæ.

Symptoms.—The eruption usually comes out suddenly with premonitory symptoms of malaise and of slight or severe febrile reaction. Other symptoms are chilliness, rigors, restlessness and other systemic disturbances. The lesions vary from the size of a pea to that of a hen's egg. They are generally quite abundant, and more or less irregularly distributed over the surface. The blebs distend and break easily, coming out in distinct crops from normal, or slightly reddened skin. Occasionally a narrow, reddened area surrounds the bullæ, the contents of which are at first clear, changing to a yellow, opaque, or hemorrhagic fluid.

1. Benign Type.—Drs. Krocker, Olshausen and other dermatologists have observed a mild form with sudden onset; in most of their cases of this variety the acute outbreaks become less active and gradually subside. The lesions were less numerous and the disease assumed a chronic form or the blebs disappeared by absorption, or by rupture, drying to yellowish brown crusts. Some of these cases were apparently contagious; numerous epidemics are reported in Germany and other parts of Europe. Hengge of Berlin reports four children infected by fetid lochia from one parturient. The British Dermatological Journal reports an epidemic with twelve cases, all infants. All were delivered by the same midwife. P. Manson noted some cases of a mild contagious character in the Tropics. Lesions are usually found about the lower part of the trunk, yet they may be of extensive and general distribution. Favorable termination is reached in a few weeks in a majority of cases of this type.

2. Malignant Type.—Tilbury Fox and others have reported cases of a severe and grave character, having fever and septic symptoms. The bullæ were abundant and widely distributed and continued to increase in severity. The nucous membrane of the throat, mouth and eyelids may be involved. The blebs become flaccid and puriform and a fatal termination usually occurs. C. Hochsinger of Leipsic states that, in his experience, when pemphigus develops on reddened skin surface, the case has proved malignant and will be fatal. His reported case died in eleven days. Lack of scab formation differentiates genuine pemphigus

from impetigo.

Report of Case.—Katie T., aged 10 days, of Russian parentage. The mother was attended by a midwife during an apparently normal labor. She has a healthy 2-year-old child. Neither of them have had pemphigus. During the latter part of the first week the mother noticed a few blisters on the body and limbs of the infant, but paid little attention to the eruption. These lesions developed more rapidly and some systemic disturbances arose, so they became alarmed and consulted me. On examination I found its body covered with bulke, which varied in size from a hazel nut to that of an egg, and with ruptured blebs, which were surrounded by yellowish crusts. The lesions were quite severe on the

^{*} Read before the Will County Medical Society, Dec. 5, 1905.

extremities. Slight involvement of mucous membranes of the throat and mouth was noted, also slight fever (99.4 F.), and septic symptoms. Bulla of even margin, oval outline, and varied sized arose from slightly reddened skin. About three fifths of the entire skin surface was covered with this cruption. The navel was not healed and was surrounded by blobs, so I was unable to determine if infection occurred from this source. I believe there was some involvement of the nervous system. The surroundings were unhygienic. The infant gradually grew weaker from the sepsis and extensive involvement, and died after three days' illness.

Diagnosis.—a. In erythema multiforme, the blebs are a part of a general eruption with circinate configuration. The lesions are usually limited to the hands and forearms and bulla arises from inflamed skin. The course is rapid, generally two weeks.

b. Bullous syphiloderm has more involvement of the palms and soles. Puriform blebs form thick crusts and, as a rule, are followed by ulceration. The lesions are more often confined to the genital and anal regions with little disposition to spread. Ulcers occur on the mucous surfaces of the mouth and lips; coryza, with snuffles, is marked. There is less bleb formation with irregular patches and infiltrated border. The history and other symptoms of syphilis, history in one or both parents, may be elicited in bullous syphiloderm.

Prognosis.—The prognosis is good in the mild type, but guarded and grave

in the malignant type.

Treatment.—1. Hygienie surroundings. 2. Plain substantial diet. 3. Medical treatment, arsenie in the form of Fowler's solution, gtt. 2-5 t. i. d., increased dose to point of tolerance. Strychnin and quinin are also recommended. 4. External applications, as ung. zinei oxidi and other soothing applications, are heneficial.

WESTERN ILLINOIS DISTRICT MEDICAL SOCIETY.

The annual meeting of the Western Illinois District Medical Society occurred at the Commercial Club, in Alton, on Friday, Oct. 27, 1905. There was a morning and afternoon session, both of which were largely attended by the physicians of the Sixth Councilor District. This district includes the counties of Adams, Brown, Pike, Scott, Cass, Morgan, Greene, Calhoun, Jersey, Macoupin and Madison. The officers re-elected for the coming year were: President, H. W. Chapman, M.D., Whitehall; first vice-president, L. J. Harver, M.D., Griggsville; second vice-president, David W. Reed, M.D., Jacksonville; secretary and treasurer, A. L. Adams, M.D., Jacksonville; Board of Censors, T. J. Pitner, M.D., Jacksonville; L. H. A. Nickerson, M.D., Quincy; Waldo Fisher, M.D., Alton.

ville; L. H. A. Nickerson, M.D., Quincy; Waldo Fisher, M.D., Alton.

The following program was given: "The Consideration of Serious Surgical Emergencies," J. A. Day, M.D., Jacksonville. In this paper particular stress was laid on the urgent necessity for efficacious and heroic treatment in desperate cases, caused by direct traumatism or other surgical diseases. Such cases do not usually bring credit to the surgeon, as success is not the rule, and he is likely to be eensured. Energetic action was urged, nevertheless. The fact was pointed out that experience has taught that certain apparently hopeless cases do recover, where an operation is done in extremis. As with our present incomplete methods we are unable to determine just when the last vestige of vital energy is exhausted, and, therefore, can not gauge the tensile properties of life, we are culpable if we do not give the patient the benefit of the doubt and operate. The surgical conditions that were mentioned, where prompt and intelligent intervention is necessary to save life, are those resulting from accident in its broadest sense; not only those cases caused by mechanical violence, but also those caused by disease. Reference was made to the fact that it was not difficult to get the consent of the patient and his friends for an operation in cases of traumatism, on account of the self-evident demand for action, and the responsibility was, therefore, not so great, the contrary being the case in emergencies arising from surgical diseases other than those eaused from trauma. It was advised that the shock be treated before operating in such cases, unless hemorrhage demands it. The dangerous practice of moving or frightening the patient after serious injuries was condemned. Infection is not apt to follow gunshot wounds, on account of the sterilizing influence of the heat produced by the rapid transit of the ball through the atmosphere. various aecidents which frequently follow severc illnesses were spoken of and appropriate treatment suggested. Considerable time was devoted to the dangerous accidents that eome about from disease, pure and simple, and attention was called to the fact that at such times the surgeon is greatly handicapped by the already weakened condition of the patient from the pre-existing disease. Especial reference was made to intestinal perforation during typhoid or appendicitis, etc., and a plea was made for timely operation, even if profound shock was present, where general anesthesia was contraindicated and local anesthesia or none at all is necessary. The paper concluded with remarks on the importance of keeping up the fight in desperate cases, even in the face of what appears to be certain death, hoping for oecasional success.

A paper on "Cholethiasis" was read by H. R. Lemen of Alton, and one on

"Pelvic Abseess," by Henry Hart, M.D., of Quincy.

In a paper on "Chronie Nephritis of the Aged" J. Palmer Mathews, M.D., Carlinville, stated that the treatment of impaired function and insufficiency of kidneys and liver is rest, and that the animal proteids should be excluded from the diet. The absorption of products of putrefaction from animal proteids in the alimentary canal is the cause of the degeneration of the arteries. By a process of yeast fermentation in milk sufficient proteid for the bodily needs is predigested. Lactic acid is a destroyer of germs and keeps down fermentation in the alimentary canal. When we recognize the full pulse of high blood pressure, the hypertrophied heart and uremic poisoning in patients of advanced age, we should warn them to stop their meat diet and seek for their proteids in the vegetable kingdom. In the examination of old soldiers who come before the pension board, there are frequently presented a group of symptoms, pathognomonic of a serious disease of degeneration. The hardened arteries, hypertrophied heart and in ufficiency of the kidneys are signs of chronic interstitial nephritis, sufficient even without the presence of albumin in the urine. The etiology is the presence in the blood of an irritant poison which raises the blood pressure in the capillaries and throws extra work on the heart and kidneys.

The differential diagnosis between parenchymatous and interstitial nephritis becomes clear when the microscope shows a proliferation of epithelial cells, the uriniferous tubules being plugged with epithelial casts. The interstitial nephritis is caused by new connective tissue in the outer coat of the blood vessels, which contracts the malpighian tufts and blood vessels of the kidney, from which the solid constituents of the blood are filtered by osmosis. We, therefore, have eopious flow of water with retention of the solids in the blood. The easts of parenchymatous nephritis are diagnostic of the chronic or acute stage. Epitaelial casts are present in the acute stage from proliferation of the cells of the uriniferous tubes. The hyaline casts indicate a degeneration and follow a subsidence of the acute stage. The presence of albumin in the urine of interstitial nephritis indicates an inflammatory process in the walls of the arteries. When the albumin is diminished the process is in abeyance and the disease is chronic. Interstitial nephritis is a degeneration of the arteries of the aged. When the vessels become narrowed high blood pressure supervenes, which eauses compensatory hypertrophy of the heart and watery urine. Congestion of different organs is frequent with consequent disturbance of function.

A paper on "Glaucoma" was read by T. L. Foulds, M.D., of Alton, and one on "Peritonitis" by J. W. Hairgrove, M.D., of Jacksonville. R. J. Christie, Jr., M.D., of Quincy, read a paper on "Tubercular Adenitis of the Neek."

R. J. Christie, Jr., M.D., of Quiney, Ill., introduced the following resolutions, which were adopted unanimously:

Resolved, That the Western Illinois District Society, assembled in annual

session at Alton, on October 27, 1905, does heartly indorse the measure entitled "A Bill to Increase the Efficiency of the Medical Department of the United States Army," to come before the committee on military affairs of the House of Representatives of the United States; and be it jurther

Resolved, That this society memorialize Congressman George W. Prince, of the Galesburg district and member for Illinois of the committee on military affairs,

petitioning him in the interest of this bill; and be it further

Resolved, That we regard this proposed legislation as of tremendous importance, both to the army and to the medico-military division of the various states;

Resolved, That in view of the humiliating inefficiency of the medical department of the army in the Cuban campaign against Spain, and other more recent experiences, we pray that he use his influence in support of this measure; and be it

Resolved, That we believe the proposed legislation is wise, just and eminently

necessary.

The discussion of the above paper was general and interesting, and, after an all-day session, the meeting adjourned. The next session of this society will be held in Jacksonville Oct. 26, 1906. A. L. Adams, Secretary.

NEWS OF THE STATE

Dr. Kuehne, of Rockford, has moved to Cedarville.

Dr. Willoughby Walling, Chicago, is in New York.

Dr. F. O. Jackman, of Bloomington, is ill with septicemia.

Dr. Charles Adams has just returned from a tour through Mexico.

A virulent form of diphtheria is reported as prevalent in Woodford County.

The Tri-City Sanitarium, Moline, has elected Dr. S. P. S. Edwards as Secretary.

Scarlet fever is reported to have broken out in the public schools of Long Point.

Dr. E. C. Gaffney, of Springfield, has gone to Spanish Honduras on a business trip.

Dr. John L. Yolton of Bloomington has been elected county physician of McLean County.

Dr. William Hessert has been appointed surgeon to the Alexian Brothers Hospital, Chicago.

Dr. M. M. Brown of Golden, Adams County, has gone to India as a medical missionary.

Dr. Ira H. Gillum, of Millford has had a stroke of paralysis and is in a critical condition.

Dr. T. W. Dresser, of Springfield, has gone to Florida for the remainder of the winter.

Dr. Frank Billings is taking a short vacation in the form of a yachting trip in the Carribean Sea.

Dr. C. A. Allen, of Virden, has purchased a building lot and will erect a new office building.

A decree of the court has authorized Dr. S. Jakubowski, Chicago, to change his name to S. Jackson.

Dr. J. E. White of Champaign has been re-elected Grand Medical Director of the Court of Honor.

Dr. M. O. Greer, formerly of St. Louis, has located in Cairo, at Ninth Street and Commercial Avenue.

A case of smallpox was discovered at the Illinois State School for the Blind at Jacksonville on February 24.

Dr. R. S. Frisbie has resigned as Assistant Superintendent of the Lincoln Asylum for Feeble-Minded.

Dr. L. Tibbetts, of Rockford, has not removed to California, as was stated in the January issue of The Journal.

Chicago citizens living near 217 Leavitt Street are objecting to the establishment of a hospital at that number.

Measles are epidemic at Argosa. Three deaths have occurred and the schools may be closed on account of the disease.

Dr. Nicholas Senn will deliver the oration on "Surgery" at the International Medical Congress at Lisbon, in April.

Dr. Chas. Nelson Ballard announces the removal of his residence to 1396 Washington boulevard, corner of Kedzie avenue, Chicago.

The Brokaw Hospital of Bloomington has had a most successful year, the increase in the number of patients treated being about 40 per cent.

- Dr. E. A. Kratz, member of the County Board of Supervisors for Champaign Township, has announced himself as candidate for re-election.
- Dr. J. L. Allaben, of Rockford, was attacked on February 14 by William Gleason, whose horse became frightened at Dr. Allaben's automobile.
- Drs. J. H. Davis and J. B. Denby, Carlinville, have purchased property on East Main street, which they will convert into offices and a hospital.
- J. Ogden Armour has given \$25,000 toward the \$140,000 required for the purchase of the lot for the new George Smith addition to St. Luke's Hospital.
- Dr. Albert Schmidt, of Quincy, has disappeared, taking with him his medical diploma and \$1,000 in cash, said to have been obtained on a check signed by his father.

A new car line has been completed from Anna to the Southern Illinois Hospital for the Insane. Arrangements have been made for running a hospital car upon this line.

The case of Dr. A. L. Blunt, 356 State Street, charged with performing a criminal operation on Miss Martha Marquardt, has been dismissed for want of prosecution.

The Weekly Bulletin of the Chicago Board of Health states that the present birth rate in Chicago is 13.11 per thousand population, or 4 per cent. less than the death rate.

Dr. Benson A. Cohoe, of the Medical Faculty of the University of Chicago, has resigned to accept a position as resident physician at the Johns Hopkins Hospital, Baltimore.

Dr. and Mrs. Fenton B. Turck, 151 Rush Street, Chicago, will leave on April 1 for Portugal, to attend the International Medical Congress. They expect to be gone about two months.

Dr. Theodore B. Sachs lectured on February 27 before the Michael Reese Alumnæ Nurses. His subject was "The Tubercle Bacillus and Its Cycle of Existence Within the Human Organism."

Dr. Palmer Findley, Chicago, has been elected Professor of Gynecology in the College of Medicine, University of Nebraska, Omaha. Dr. Findley expects to remove to Omaha in the spring.

Dr. Howard Crutcher, of Chicago, chief surgeon of the Chicago and Alton Railroad, has resigned and moved to Denver, Colo. The change was necessary on account of the condition of his health.

Dr. Homer O. Bates, formerly of Chicago, has located at Long Beach, Cal. He has been elected president of the local medical society and one of the committee to build a \$60,000 hospital, which is being erected.

Dr. Hiram L. Cosby, Lincoln, has been awarded a verdict for \$350 against Sheriff James White, of Logan County, for professional services rendered in attending a man accidentally shot by the sheriff last year.

The first anniversary of Columbus Hospital, Lake View Avenue and Deming Place, Chicago, was celebrated by high mass on February 26. The hospital is conducted by the Missionary Sisters of the Sacred Heart.

Dr. Rachelle S. Yarros lectured on the "Hygiene of Women" on February 24, at the Chicago Public Library. The lecture was one of the popular lectures given under the auspices of the Chicago Medical Society.

Dr. R. S. Frisbie has resigned as assistant superintendent of the Asylum for Fceble-minded Children at Lincoln. It is reported that the Logan County grand jury has refused to take any action on the charges brought against him.

The Chicago Eyc, Ear, Nose and Throat College is planning to erect a new building at a cost of \$75,000. This has become necessary owing to the growth of the institution. At the annual meeting the board of directors was re-elected.

The middle section of the American Laryngological, Rhinological and Otological Society held the most successful meeting in its existence at Chicago on February 26. A large number of specialists from the Middle West were in attendance.

In the damage suit for \$50,000 against Dr. George W. Webster, President of the Illinois State Board of Health, brought by Augusta Luckchun, the jury returned a verdict for the plaintiff in the sum of \$3,000. Dr. Webster has appealed the case.

The Iroquois Memorial Association has abandoned its plans for building a memorial hospital in commemoration of the victims of the Iroquois Theater fire. Lack of interest and financial support of the project is responsible for this decision.

Chief Collins, of the Chicago police force, has detailed two detectives to ride on the Northwestern Elevated Railroad and arrest all persons violating the anti-spitting ordinance. The rule will not be enforced in smoking cars, but only in cars used by women.

Dr. Thomas A. Woodruff lectured on "The Care of the Eyes and the Eyesight," at the Public Library Building, Chicago, on February 24. The lecture was one of a series being given under the auspices of the Chicago Medical Society, for the education and instruction of the laity.

The State Civil Service Board held examinations for attendants in the insane asylums at Anna, Watertown and Elgin, March 6; Peoria,

Kankakee and Centralia, March 7; Jacksonville, Benton and Tuscola, March 8; and Effingham, Fairfield and East St. Louis, March 9 and 10.

An examination for internes in the Cook County Hospital and the county institutions at Dunning, was held on Tuesday, Wednesday and Thursday, March 6-8, by the examining board. This is the first examination held under the new regulations. Over one hundred took the examination.

Dr. John Haywood, of Chicago, who was arrested on complaint of J. Hottinger, a druggist at 224 Lincoln Avenue, for attempting to break open a Salvation Army poor box in order to obtain money to buy cocain, was fined \$50 and sent to the Bridewell, at his own request, by Justice Mahoney.

Judge McEwen has decided against the Chicago Medical Society in its attempt to keep the bowlder in Grant Park as a monument to the memory of Dr. Guthrie. Judge McEwen dissolved the writ of injunction obtained by the society, stating that the proper form of relief was through a writ of mandamus.

In the suit of W. P. Eich, of Emington, for alleged malpractice against Drs. C. P. Wycoff, of Emington, and W. G. Ross, of Kempton, the plaintiff completely failed to make a case and the jury returned a verdict in favor of the physicians, without any testimony for the defense having been given. The costs were assessed against Eich.

The City Council of Joliet has voted in favor of a new pest house for the joint use of the city and township of Joliet. An appropriation of \$7,000 has been made for the new building. Much credit is due Dr. W. A. Roberts, the local health commissioner, who has labored long and earnestly for a new isolation hospital.

Ludvig Hektoen, M.D., Professor of Pathology of Rush Medical College, delivered an address on "Immunity in Theory, Experiment and Practice" before the Wayne County, Michigan, Medical Society, January 15. Professor Hektoen's address appears in the March number of the Journal of the Michigan State Medical Society.

The building committee of the Cook County Board has decided to accept the plans of President Brundage, providing for a Consumptives Emergency Hospital on the grounds of the County Hospital. The building will be two stories high and will cost \$15,000. It is intended for the reception and treatment of consumptive patients whose condition will not warrant their transportation to Dunning.

St. Luke's Hospital, Chicago, has purchased the lot with a 70-foot frontage on Michigan Avenue, at a cost of \$140,000, and will erect a new building as a memorial to George Smith, a former banker of Chicago. A gift of \$500,000 for this purpose was recently received from James Henry Smith, of New York, heir to an estate of \$50,000,000 left by George Smith.

Mortality reports for Chicago for February show the lowest death rate for this month in the last 63 years. A rate of 10.7 per thousand

of population is nearly 2 per cent. lower than the previous lowest record, which was 14.33 in February, 1901, and over 15 per cent. lower than the average February death rate for the last decade, which was 16.59. The percentage of possible sunshine during the month was 57, the normal average for February being 52 per cent.

Chief Sanitary Inspector Hedrick, of the Chicago Health Department, has recommended the discharge of all women employed as sanitary inspectors, with but one exception. Mr. Hedrick claims that more efficient service can be rendered by male inspectors. At a mass meeting of the Woman's Club, held at the Armitage Avenue Settlement House, resolutions were adopted protesting against the carrying out of Mr. Hedrick's recommendation.

Commissioner of Health Dr. Charles J. Whalen, in the *Bulletin* for March 3, reports one case of smallpox scnt to the Isolation Hospital on February 26. This is the third case of smallpox found in Chicago since January 1. The patient was an unvaccinated colored porter, who was exposed to the disease at a small station on the Chicago and Northwestern Railroad near Lincoln, Neb. This is the only case at present in the Isolation Hospital, which one year ago had 83 smallpox patients.

The new hall and the tubercular cottages at Watertown Hospital were dedicated on Lincoln's birthday. The hall has cost about \$20,000, half of the work having been done by the patients. The cottages have been built from the surplus remaining from the appropriation made by the state, all the labor on them being done by the patients. Dr. W. E. Taylor, the superintendent, delivered the dedicatory address. The hall is equipped with bowling alleys, billiard tables, dancing floors and a stage with scenery.

Mrs. Wilhelmina Benn, of Maywood, and Mrs. Hagenow, of 480 North Clark Street, have been held to the grand jury by the coroner's jury as the result of inquests following the deaths of Miss OtillaWinkler and Miss Lola Maddison. Captain Healy, of the Chicago police force, states that Mrs. Hagenow has been arrested several times before for the same offense; that she was convicted on April 30, 1900, and paroled Dec. 20, 1902. Statements were obtained from the patients in each case, implicating the women named.

The De Witt County Medical Society is making plans for the dedication of the Dr. John Warner Hospital at Clinton in the latter part of March or the first week in April. At the same time, the De Witt County Society will celebrate its fiftieth anniversary. Clinics will be held by a number of prominent surgeons. The dedication address will be delivered by a speaker of national reputation. Hon. Vespasian Warner, Commissioner of Pensions, and son of Dr. John Warner, in memory of whom the hospital is erected, has promised to be present.

Mrs. E. R. Liens, of Decatur, who has been frequently prosecuted for violation of the Illinois Medical Practice Act, has been compelled by the attorney for the state board of health to sign a written agreement to discontinue practice and to settle for all her violations of the law, includ-

ing the payment of all costs of the prosecution. The woman conducted a bath and massage institution in Decatur and also made and sold the "Lien Diphtheria Cure," treating and earing for cases of diphtheria. The State Board of Health began prosecution in the Justice Court, where the suit was decided in favor of the defendant. The board appealed the case, which was heard in the January term of the Macon County Circuit Court.

New corporations licensed by the secretary of state at Springfield are as follows: Charles H. Nichols & Co., Chicago; capital, \$5,000; manufacturing medicines; incorporators, Charles H. Nichols, W. H. Patton and W. H. Johnson. St. John's Medical University, Chicago; capital, \$25,000; educational; incorporators, Jerome C. M. Chaffec, Joseph W. Sharts and Hugo H. Duerselen. Steloid Company, Chicago; capital, \$25,000; chemicals, sanitarium, surgical sundries; incorporators, Daniel D. Hunt, Edw. D. Wahl and Charles H. Bowles. J. C. Ronshausen Company, Chicago; capital, \$5,200; picture frames, moldings; incorporators, George E. Ruther, Hamilton Moses and F. J. Noonan. Chicago Medical Society, Chicago; number of directors decreased from eleven to five.

Dr. R. C. J. Meyer, Commissioner of Health of Moline, has devised a system of mailing cards for the use of the members of the local profession in reporting contagious diseases. The first card is mailed to the physician in charge of the case, who fills it out and returns it to the office of the Commissioner, stating the name and address of the patient, and the nature of the disease. The second eard is sent by the Commissioner to the public sehool attended by the children in the family, and to the Public Library, the object being to prevent the spread of contagion. The last card is a termination notice, sent to the school, Public Library and other public institutions, notifying the authorities that the infected premises have been thoroughly disinfected and that there is no further danger of the disease being communicated.

George B. McClellan, of Pcoria, known as "Diamond Dick, the original Indian Doctor," was fined \$100 and costs for practicing medicine without a license and was forced to give to the constable a bill of sale on his trunks and personal effects, in order to satisfy the judgment. The prosecution was conducted by Emory Lancaster, a local attorney, acting for the Illinois State Board of Health. This man is an old offender against the Medical Practice Act, and has hitherto escaped punishment. Authorizations for his prosecution were issued in McHenry, McLean and Marshall counties and suits instituted, but he escaped in each instance before service could be had upon him. During February he was found violating the law in Adams County, near Quincy. Prosecution and conviction followed at Golden. This is the third time that he has been fined for violation of the Medical Practice Act, previous instances occurring at Peoria in 1901, and at Marcngo in 1903, where he worked out a part of his fine in jail.

NEW MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY.

During the month of February, 1906, the following physicians have become members of their county society and of the Illinois State Medical Society:

CHAMPAIGN COUNTY.

J. H. Finch, Champaign. W. L. Gray, Champaign. W. F. Burris, Urbana. W. M. Dillon, Urbana. A. L. Collins, Mahomet. N. R. Collins, Mahomet, Lucy Exton, Thomasboro. A. J. Foelsch, Bondville. Ava Michener, Homer.

COOK COUNTY. Manuel Alvarez. J. B. Armstrong. A. H. Benson. C. Bertschinger. D. Birkhoff. Gustavus M. Blech. Rexwald Brown. Oscar Cleff. P. C. Clemensen, South Chicago. E. V. Cory. J. C. Crist. W. J. M. Cunningham. Frank S. Davidson. J. B. Diamond. George C. Dittmann. F. E. Dostal. I. H. Eddy. William B. Fehring. James L. Fleming. E. B. Greene. C. G. Grulee. C. Gunderson. James W. Hall. O. C. Hargreaves. Samuel G. Higgins. Frank E. Hoffmann. . Ed M. Holmes. Merritt O. Hoover. Niels J. B. Johnsen. A. F. Kramps. T. D. Laftry.

W. H. Lamborn.

H. H. Latimer.

George L. McLaughlin.

H. W. Lang.

J. A. Lenz. F. D. Marshall.

John Meany.

E. B. Meisirow.

A. W. Mercer.

Daniel G. Moore. H. R. Miller. Charles T. Murphy. George F. Pierce. Thomas H. Renn. Max J. Salamson. Charles P. Schell. J. Lawrence Smith. J. A. Stevenson. Rufus B. Stolp, Kenilworth. Frank W. Van Kirk. W. S. Wallace. Charles W. Winne.

DECATUR COUNTY. D. E. Yantes, Foosland. J. H. Spyker, Decatur. N. L. Bourne, Decatur. L. P. Walbridge, Decatur. J. T. McDavitt, Decatur. S. L. Thorpe, Decatur. R. D. Backley, Cerro Gordo. C. H. McDonald, Decatur. DOUGLAS COUNTY. lles McNeil, Newman. EDGAR COUNTY. N. A. Murphy, Paris. EFFINGHAM COUNTY.

C. M. Wright, Attamont. G. M. Baker, Altamont.

KANE COUNTY.

H. L. Pratt, Elgin. E. A. McCormack, Elgin. F. J. Coughlin, Aurora. Charles F. Read, Geneva. C. B. Johnson, Batavia. E. F. Cleveland, Dundee. MACOUPIN COUNTY.

H. A. Pattison, Benld.

MOULTRIE COUNTY.

W. E. Stedman, Sullivan. A. D. Miller, Sullivan. W. P. Davidson, Sullivan.

S. W. Johnson, Sullivan.

F. P. Zerfass, Sullivan. J. D. Hardinger, Gays.

D. D. Grier, Gays. J. H. Vadakin, Bethany.

W. II. Davis, Bethany.

PEORIA COUNTY.

E. M. Eckhart, Peoria.

S. Bane, Peoria.

L. Rutherford, Peoria.

C. H. Stocking, Peoria.

J. E. Heald, Peoria.

G. H. Weber, Peoria.

J. H. Bacon, Peoria.

I. C. Stevens, Peoria.

C. B. Welton, Peoria.

RANDOLPH COUNTY.

W. A. James, Cnester.

W. R. McKenzie, Chester.

H. C. Adderly, Chester.

L. J. Smith, Chester.

A. D. Steele, Chester.

J. W. Weir, Sparta.

H. T. McKee, Sparta.

E. L. Hill, Percy.

Walter E. Sanger, Menard.

C. G. Smith, Redbud.

H. L. Saulnier, Redbud.

H. C. Dinges, Redbud.

J. G. Beattie, Preston.

Thos. Robertson, Stecleville.

J. P. Gillen, Prairie du Rocher.

W. C. Isom, Rockwood.

J. T. Reiss, Baldwin.

ST. CLAIR COUNTY.

George Loelkles, Belleville.

VERMILION COUNTY.

C. E. Brown, Rossville.

T. C. McCaughey, Hoopeston.

Isaac Mayhue, East Lynn.

J. H. McIntosh, Danville.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of February, 1906, the following members of the Illinois State Medical Society became members of the American Medical Association:

Bryant, J. H., Galesburg.
Brill, J. A., Chicago.
Buchanan, W. A., Paris.
Bradley, R. H., Marshall.
Becker, H. F., Danville.
Coggshall, T. C., Henry.
Cruse, C. V., Iola.
Culbertson, S. D., Piper City.
Dowdall, W. T., Jr., Peoria.
Dwight, F. A., Chicago.
Eddy, I. H., Chicago.
Epperson, J. C., Kansas.
Friedman, J. C., Chicago.
Granay, T. L., Irvington.
Gaffner, Theophilus, Trenton.
Heflin, H. N., Kewanee.
Holleman, P. W., Chicago.
Hummell, R. O., Joliet.
Hayman, L. B., Chicago.
Kaiser, J. M., Somonauk.
Kimball, Z. V., Hillsboro.

Lehman, S. W., Dixon.
Lang, H. W., Chicago.
Law, E. F., Weston.
Lyons, Jennie, Champaign.
Lowery, J. E., Homer.
Lamborn, W. H., Chicago.
Melaik, H. B., Kcwanee.
McCaughey, R. S., Hoopeston.
McGonagle, T. C., Chicago.
Ochsner, E. H., Chicago.
Oehsner, E. H., Chicago.
Pearce, Edward, Marshall.
Powell, G. P., Dixon.
Renn, T. H., Chicago.
Roane, J. Q., Boulder.
Spangenberg, W. C., Chicago.
Ulrich, J. H., Peoria.
White, J. V., Auburn.
Woltman, H. C., Jacksonville.
Watcrous, H.W., Galvin.
Werth, S. S., Oak Park.

MARRIAGES.

Albert W. Slaughter, M.D., Paris, Ill., to Miss Mary Golden, of Urbana, February 10.

WLADISLAW A. KUFLEWSKI, M.D., Chicago, to Miss Angeline R. Cwiklinski, of Buffalo, N. Y., February 21.

HARRY J. BRUGGE. M.D., to Miss Mary Elizabeth Morrison, both of Chicago, February 7.

DEATHS.

Dr. Samuel C. Latham, College of Physicians and Surgeons, Keokuk, Iowa, 1870, died January 28, at Enfield, Ill., aged 72.

Dr. Thomas Kelly, a former resident of Clinton, died recently at San Jose, Cal. Dr. Kelly was for many years a prominent figure in the professional and political life of De Witt County, being County Treasurer for several terms.

DR. THOMAS B. HUNT, a graduate of the University of Louisville Medical Department, 1864, died at his home in Warsaw, from rheumatic endocarditis, aged 75. Dr. Hunt was assistant surgeon in the Fiftyfourth Kentucky Mounted Volunteer Infantry during the Civil War.

Dr. L. P. Rodgers of Beatrice, Neb., formerly a prominent practitioner of Sangamon County at Buffalo, was killed accidentally at Godfrey, Sunday, February 25. About five years ago Dr. Rodgers gave up the practice of medicine and became real-estate agent for Lord Scully in Nebraska.

Dr. A. L. Darling of Kilbourne was found dead in a hotel in Pekin recently. He was 55 years of age and had practiced medicine in Havana, Easton, Topeka, Manitou, Bloomington and Pekin before going to Kilbourne. Dr. Darling at one time was prosperous, but owing to unfortunate habits had lost his wealth and died as a result of his misfortune.

Dr. John C. Spray, Chicago Medical College, 1873, died at the People's Hospital, Chicago, February 20, from pneumonia, aged 60. Dr. Spray was medical superintendent of the Cook County Hospital for the Insane from 1878 to 1889. He was an alienist of wide reputation, and was one of the first physicians to advocate the employment of suitable amusements in the treatment of the insane.

Dr. F. E. North, Secretary of the Christian County Medical Society, died at the Baptist Hospital, St. Louis, Mo., following an operation for appendicitis. Dr. North graduated at the College of Physicians and Surgeons, Chicago, in 1900, and immediately located at Taylorville where he built up a large practice. He early identified himself with the Christian County Medical Society, of which he was secretary for the past two years. His death is a great loss to professional circles in Christian County.

Sumner Clark, M.D., St. Louis Medical College, 1871, a member of the Illinois State Medical Society for a number of years, a member of the Esculapian Society of the Wabash Valley, and at the time of his death the honored president of the Effingham County Medical Society, died at his home in the city of Effingham, Ill., after a short illness, March 5, 1906, aged 74. He practiced his profession for more than forty-nine years. He was one of the oldest and most prominent physicians in Effingham County. His funeral was conducted by the Masonic Lodge of Effingham.

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ORIGINAL ARTICLES

SOME FOOTPRINTS OF A PREHISTORIC RACE.*

W. M. Roberts, A.M., M.D.

NORRIS.

The volume of the past is written in a language whose alphabet scientists have not vet thoroughly learned. We trace history back through the long cycles of its existence, until in Egypt the golden thread is lost and we grope in the gloom and darkness of unknown by-gonc ages. Many are the races which once dwelt upon our earth, whose only story is told by their crude implements or weapons. Standing beneath the Pyramids, we gaze upon their summits almost piercing the clouds and marvel that forty centuries have passed since their cap-stones were set by an almost unknown race of people. But far below the soil forming the banks of the Nile are found relics which carry the inhabitants of Egypt so far back that the Sphinx becomes modern in comparison. Nor need we go so far from home. Previous to the time when this country was inhabited by Indians there roamed its prairies and wood-lands a race of people far superior to the Red man in mental development. Although at the time what is now known as the United States was discovered Nature held almost undisputed sway, vet evidences of their handiwork in the form of earth works were found, and, as the more important of these were mounds, they were given the name "Mound Builders." Whence they came is a question that has long, and will probably ever baffle the skill and ingenuity of the best scientists. Some disbelieving that the ancestry of all mankind can be traced to one pair, maintain that they were indigenous to this country and have relegated them to a position no higher than the droves of wild animals in the forests or the fishes of the rivers. But mounds are not found in America alone. In the words of another: "They are scattered over India. They dot the steppes of Siberia and the vast region north of the Black Sca. They line the shores of the Bosporus and the Mediterranean. They are found in old Scandinavia and are singularly numcrous in the British Islands."

^{*} Read at the meeting of the Military, Tract Med. Society, Nov., 1905.

The remains of the Mound Builders in this country are found principally along the Mississippi, its tributaries and the Gulf of Mexico. Isolated works are scattered here and there, but evidences are not wanting to show that the headquarters of this people were situated near the junction of the Ohio River with "The Father of Waters." Doubtless the same motives which prompted our forefathers to settle along the rivers and water-ways induced the primitive inhabitants to make there their places of abode, for by so doing they could hold communication and commercial relations with distant tribes that would otherwise be impossible. Their works are so varied that to describe all the different kinds would far transcend the limits of this paper. Hence, only two or three of the more prominent classes will be described.

Burial Mounds: These vary greatly in size. One at Miamisburg. Ohio, is sixty-eight feet in height and eight hundred and fifty feet in circumference. Another at Grave Creek, West Virginia, is seventyfive feet high and almost one thousand feet in circumference. average, however, is much less. A vault was constructed of timbers, sometimes set on end and sometimes laid up like a log house. Frequently slabs of stone were used. The dead were placed in the enclosure and then doubtless hundreds of willing hands helped to rear the pile which would not have been an unworthy monument to one of Egypt's Pharaohs. From traces that remain, it is evident that a matting of bark or thin strips of wood formed the couch on which the body was placed. In exploring the mound at Grave Creek, it was found that besides the vault on a level with the original surface of the soil, there was a second, thirty-four feet from the top, containing one skeleton. From these facts it is inferred that as members of the family died from time to time they were buried in the same mound, which was increased in size that it might conform to its new dignity. There were two skeletons in the first or One had no ornaments whatever, but the other was decorated with shell beads to the number of six hundred and fifty and a bone ornament six inches in length. The skeleton in the upper vault was adorned with rings of copper, mica plates and shell beads in profusion. Dr. Clemens, who was present when the mound was opened, says: "On carrying in the horizontal excavation at a distance of twelve or fifteen feet were found numerous masses of charcoal and burnt bones. On reaching the lower vault from the top it was determined to enlarge it for the accommodation of visitors, when ten more skeletons were discovered. Here, beyond doubt, was a royal sepulcher. Human beings were offered as sacrifices and the magnate's servants or relations were slain that their spirits might accompany his in its journey through the misty vales of the unknown shadowy land."

Effigy Mounds: These are found mostly in Wisconsin, and this has led many to believe that here was the home of an entirely separate people. While it may be admitted that the works vary in different sections, yet there is a resemblance, a sameness of construction which precludes the possibility of distinct peoples. Among the animals represented are the buffalo, wolf and fox. The feathered tribe has its quota, shown by the

hawk and eagle; the reptiles by the lizard and turtle. Only two cases are mentioned in Ohio which are described by Squier and Davis. "The first is the great scrpent with its head conforming to the crest of a hill, and its body winding back for seven hundred feet in graceful undulations, terminating in a triple coil at the tail. The second is the alligator. From the point of the nose following the curves of the tail to the tip is about two hundred and fifty feet, the breadth of the body is forty feet, and the length of the legs or paws each thirty-six feet." The former is in Adams and latter in Licking County. It is difficult to determine just why these effigies were made. Whether each tribe believed itself to have descended from some bird, beast or reptile and erected a monument to that particular object, or whether the animals themselves were worshiped, are questions about which we can do nothing but conjecture.

Works of enclosure: By far the most extensive are those at Newark, Ohio. Here are two circles, a square and an octagon, also mounds and parallel road-ways in profusion. The first circular embankment is twelve feet high, fifty feet wide at the base with a ditch on the inside seven feet deep and thirty-five feet in width. It is not a true circle, the diameters being twelve hundred and fifty and eleven hundred and fifty feet. Almost thirty acres are enclosed. The second circle is perfect, half a mile in circumference, but has no interior ditch. incloses twenty acres. The square is not perfect. Each corner is marked by a low mound. In area it is nearly twenty acres. octagon has eight entrances, each marked by an oblong mound five feet high, eighty feet wide and one hundred feet in length. Fifty acres are enclosed. The first circle is connected with the square by a broad avenue defended by low walls on either side. A similar passage about a mile in length leads to the octagon which is joined to the second circle by a road-way sixty feet wide and three hundred feet long.

Many other works belong to the same system, but space forbids their description. They must, however, be considered among the most stupendous works of either antiquity or modern times. Work with teams and scrapers is not fast; pick and shovel are slower still, but how infinitely slower must have been the labor of those who performed such gigantic works with no implements save stone and copper hatchets and willow baskets? Two things are proved by these remains, viz.; that they were an agricultural people and had reached a high state of barbaric development. It is not customary for wandering tribes to till the soil to any great extent or erect dwellings beyond the most temporary sort. But this people must have derived sustenance in a large measure from the soil and have had a fixed habitation or they would not have remained in one place long enough to commence such immense works to say nothing of carrying them almost to completion. There must have been some central government. Generally a chief controls a few hundred at most, but here was the labor of thousands, and some master mind planned and some master hand executed the work. We read that the pyramids were built by forced labor; so, possibly, before America was known to history, slaves and prisoners of war, month after month and year after

year, drudged out their weary lives heaping high the monuments of a people which even legend and tradition have forgotten.

Another interesting study is the heaps of shells found in Louisiana, Florida, and other places. Those in Florida vary from eonical heaps fifteen or twenty feet in diameter, to ridges hundreds of feet in length. Scattered through these implements of various kinds and oceasionally a skeleton is found. The shells bear evidence of having been opened in some crude manner as by crushing, rather than by a sharp instrument having been inserted, thus leaving each half whole. These heaps have caused much comment, but scientists generally agree that they are the remains of some great feast. Year after year the Mound Builders held feasts at the places where the shells are found, the refuse meanwhile aceumulating until its immensity almost staggers belief. The skeletons found are only accidental. At the feast some one has died and, not wishing to stop the festivities, his companions have buried him in the chcapest possible manner, by covering him with shells. Their weapons were mostly of stone, axes, arrow and spear heads being made. Copper was much used, both for weapons and ornaments. It was generally hammered into shape. Occasionally, evidences are found of its having been melted, but they are rare, and we must conclude that, for the most part, smelting was unknown. Implements were also of stone, and household utensils were made of burnt clay. Pipes are found, thus showing that the Mound Builders well understood the use of tobacco. The pipes were carved from very hard stone in the most artistic fashion. Human faces are not infrequently found represented which show a skill far beyond that of a mere tyro. A hawk is represented preying upon a smaller bird, and an otter bearing off a fish in its mouth. From the large amount of work necessary to carve out a pipe we are lcd to conclude that tobaceo was as great a luxury then as now. Well has some one said: "To know the whole history of tobacco, of the custom of smoking and of the origin of the pipe would be to solve many of the most interesting problems of American Ethnology."

In religion, Mr. Foster says: "The Mound Builders worshiped the elements, the sun, the moon and particularly fire. They erected their fire altars for sacrifice on the highest summits." Various other evidences are found to strengthen this belief, but of course so far as discoveries have yet been made, it can not be positively asserted. But whatever may be said concerning their worship, belief in a future state is plain, for around the corpses were placed those implements which had been useful to the deceased during life, that they might still be of service to him when the spirit land was reached. Vessels, too, which are supposed to have contained food, are found, beyond a doubt placed there by loving hands and replenished from day to day in order that the deceased might not hunger in his long journey to the unknown shore. No writing is found, not even hieroglyphics. Why a people so far advanced in many things should lack some kind of sign language is indeed a mystery. all likelihood they were progressing, but before the point of written communication was reached they were, by some force or other, blotted out of

existence. Knowledge of mensuration was understood, for eircles and squares geometrically correct are numerous. We see from their works that their numbers must have been large, and extensive commercial relations existed, for in one of the tumuli on the banks of the Ohio were found obsidian from Mexico, fossils from New Jersey, eopper and silver from the shores of Lake Superior, and shells from the Gulf of Mexico. Mining was quite extensively carried on. Mr. S. O. Knapp, in the employ of the Minnesota Mining Company, made some highly surprising discoveries in the year 1848. Observing some exeavations, which he was sure were artificial, he explored them. One was over twenty feet deep and almost filled with débris. At a depth of eighteen feet he eame upon a mass of copper ten feet long, three feet wide and almost two feet in thickness, weighing over six tons. Exeavating around the mass he found it to rest upon small timbers laid up cob-house fashion. The wood was soft from its long exposure to dampness, and earth packed in beneath sustained the weight of the copper. The lump had been raised several feet when the primitive miners gave up the arduous task. Mr. Knapp took from several exeavations over ten eart loads of stone mauls. These ancient implements were of green stone and porphyry. A groove was eut round a block of stone and a withe fastened in the groove formed for the Mound Builders what the modern miner calls a sledge. One weighed thirty-nine pounds. No mounds are found in this vicinity, which leads us to believe that these places were visited during the summer months for the purpose of mining copper. From a mound near Chillicothe, Ohio, large plates of miea were obtained, some a foot in diameter. It was long a mystery where this came from, for though abundant in many places, its size did not compare with that taken from this mound. In 1872, Prof. Keir, of the Geological survey of North Carolina, explored some pits which bore unmistakable evidence of having been made for the purpose of mining mica. There is now no reasonable doubt but that this was done by the Mound Builders.

When they came is as puzzling a question as whence. The savage has not the slightest tradition, and the boldest scientist would not be presumptuous enough to risk his reputation on a date. On a mount at Galena, Illinois, is the stump of an oak tree cut down sixty years ago which showed the tree to have been at least two hundred years old by its rings. Mr. Knapp felled a hemlock, growing on a heap of minc rubbish, which had three hundred and ninety-five rings of annual growth. Near Silver Spring, Florida, are half a dozen live oaks growing on a heap of shells, which at a distance of five feet from the ground have a eircumference, one of thirteen, three of fifteen, one of nineteen and one between twenty-six and twenty-seven feet. The latter, however, has been destroved in the last few years. Yet these do not tell us when the mounds were erected. Nature is ever changing, tearing down and building up. Forests spring up, wax old and decay, and, for aught we can tell, twenty centuries of forest dust intervenes between the trees which we now behold and the time when the Mound Builders flourished. So nearly indestructable is a mound of earth that it is not impossible that these were reared when the pyramids were infants. If man wishes a lasting monument let him heap up a mound of earth, sow grass seed upon it and he will have a mausoleum standing centuries after contemporary obelisks of marble and granite have crumbled to powder.

In 1838 the skeleton of a mastodon was exhumed by Dr. Koch in Gasconade County, Missouri. The bones gave evidence that the animal was mired in the soft river bottom, for the bones of the legs were in an upright position. The bones of the upper part of the body were more or less powdered by fire which, proofs were not wanting to show, had been built by human hands. Judging from the ashes the fire had been of long duration and most intense about the head. In and around the skeleton were found stone axes, arrow heads and one spear head. The story as given by these mute witnesses of by-gone years is simple. The huge creature had been mired in the mud and while in this condition was attacked by the Mound Builders, who, unable to kill it with the crude weapons, had resorted to fire.

We can not tell the exact time when they first inhabited this country, but we can surely assert that they were contemporaneous with the masto-

don, megatherium and cave bear.

Their going was as mysterious as their coming. Some have thought that the Mound Builders of the Mississippi Valley, retreating south before the onslaughts of some more war-like people, became the Aztecs of Mexico and Peru. If so, Spanish greed for gold has forever destroyed the scientists' last hope of learning their ethnologic similarities, and silence will continue to hold sway over facts which, if brought to light, would rival the boldest tales of fairy-land or fable. No historian has recorded their progress and downfall. No sculptor chiseled the form of their heroes. The battle songs are hushed, the conquests of the victor are not applauded, and he lies side by side with the skulker. No poet sings of womanly virtue. Unheralded they came, unheralded they went, and only their works remain telling us of a once powerful people, and standing like mute sentinels along the highway of time keeping watch over the flight of time and lapse of ages.

"Thou unrelenting past,
Strong are the barriers round thy dark domain,
And fetters sure and fast,
Hold all that enter thy unbreathing reign.
For in thy realm withdrawn,
Old empires sit in sullenness and gloom,
And glorious ages gone,
Lie deep within the shadow of thy womb.
Full many a mighty name
Lurks in thy depths, unuttered, unrevered,
With thee are silent fame,
Forgotten arts and wisdom disappeared."

GROSS ABNORMALITIES OF THE APPENDIX VERMIFORMIS, NOTED IN 3,550 AUTOPSIES.*

AIME PAUL HEINECK, M.D. CHICAGO, ILL.

Anatomical, pathological and clinical data concerning the appendix vermiformis are always of a practical interest to the medical practitioner. The frequency of pathological conditions in this organ, be they of a degenerative, of an inflammatory or of a neoplastic nature, is responsible for the many studies which have appeared on the appendix vermiformis. There are normal conditions, locations, sizes and general relations of the appendix. Any deviation from the normal we consider abnormal. How can the nature and the frequency of these abnormalities be determined; be they abnormalities in location, in size, in general relations or in anatomical integrity? By the comparison and the discussion of observations made in the dissecting room, on the operating table and in the postmortem room. This paper is based exclusively on observations made in the latter. The postmortem records of 3,550 consecutive and unselected autopsies held in the Cook County Hospital between Jan. 1, 1893, and Dec. 30, 1905, inclusive, were examined. These postmortems were held on patients who died in the institution. An autopsy in this institution can only be held in the absence of protest from friends or relatives. No special space in the records was allowed to the appendix until the year Before that time the nature, the frequency and the importance of inflammations of this organ were not as fully understood and as fully appreciated as they are now.

The frequency of adhesion of the appendix vermiformis to neighboring structures and organs impressed us. The appendix vermiformis was found adherent to neighboring structures or viscera 486 times. It was not possible to determine accurately in what proportion of cases the condition of "adherent appendix" was due to a previous inflammatory process of the appendix; or to a previous inflammatory process extending to the appendix from adjacent structures, in which it had originated. These adhesions are of interest to the clinician, to the pathologist and to the surgeon. They are frequently the cause of obscure abdominal pains. obscure as to correct interpretation, due to adhesions to colon, to small intestines and to the abdominal wall; of digestive disturbances, due to adhesions to stomach, liver, gall bladder. They may be the cause of vesical or of rectal tenesmus, due to adhesions to the urinary bladder, to the sigmoid flexure of the colon or to the rectum.

Adhesions may lead to kinking, to twisting, to obstruction of the appendix, to interference with its circulation, to impairment of its peristaltic action; they may be the means of extension of an inflammatory process from the appendix to the structure or the organ to which the appendix is adherent; they may make the appendix serve the office of a band over which a loop of intestines may become kinked or beneath which a coil of gut may become looped; in either case intestinal obstruction or

^{*} Read before the Chicago Med. Society. Feb. 7, 1906.

strangulation results. The appendix may lie concealed in a mass of adhesions.

In 145 cases of chronic adhesive appendicitis examined and analyzed at the Boston City Hospital, 118 showed no evidence of any abdominal condition to which adhesion could be referred other than a prior inflammation of the appendix. Hence they can be considered cases of primary chronic adhesive appendicitis. In 27 eases other sources for the adhesions could be ascertained eausing secondary chronic adhesive appendicitis, as salpingitis, hydrosalpinx or myoma of uterus; in 3 cases, careinoma of the uterus, with other pelvie structures; in 3 cases, disease of the gall bladder; in 2, tubercular peritonitis, etc. These adhesions always prolong the operative intervention and may lead the surgeon to completely modify his technic in appendectomy, as for instance, in those eases in which the appendix is so closely adherent to the wall of the cecum that it appears almost a part of it and can not with safety be separated from it. In such eases, the appendix may be split lengthwise and its mucous membrane removed and ligated at its junction with the eecum, and the wound in the appendix sutured.

The analysis of 486 cases in which the appendix was adherent shows the following:

			Cases.
Appendix a	dheren	t to cecum in	357
• • • • • • • • • • • • • • • • • • • •	41	" psoas muscle	
**	**	" hernial sac	
46	46	" omentum	16
66	66	" small intestines	18
**	66	" ascending colon	10
, ē	66	" parietal wall	
6.6	4.6	" brim of pelvis	
66	+6	" rectum	2
66		" sigmoid flexure	1
44	44	" stomach	
**	4.6	" liver	2
**		" urinary bladder	1

In the cases in which it was adherent to the psoas muscle, in some the course of the appendix was parallel to the long axis of the psoas muscle; in some transverse to it; in others oblique.

In eases of adherent appendix, not included in the above, the appendix was adherent to more than one structure.

Cunningham says: "The following locations of the appendix vermiformis have been considered normal by one or more observers: 1, over the brim, into the pelvis; 2, upward behind the cecum; 3, upward and inward toward the splcen." In these 3,550 cases it is reported that the appendix was located, partially or wholly, in the true pelvis 155 times. This fact shows the utility of reetal and of vaginal examinations in suspected cases of appendicitis; it explains the frequency of pelvic abseesses in suppurative inflammations of the appendix vermiformis, and the rup-

turing of some of these abscesses into the uterus, into the rectum, into the urinary bladder, etc.

The appendix vermiformis was found in a hernial sac five times, Cases 6182, 6924, 5245, 5344 and in Case G. B., June 26, 1896. In each of these cases we were dealing with a right inguinal hernia. In one the appendix was the only viseus present. In two others a part of the cecum was present in the hernial sac, with the appendix, and in the fourth small intestines and the appendix vermiformis formed the contents of the hernial sac. All these herniae were irreducible owing to the presence of adhesions. In one of these cases (5245) many concretions were found in the appendix.

The appendix was retroperitoneal in 12 cases. A retroperitoneal appendix is liable, if it becomes inflamed, to cause a retroceed or retrocolic abscess. Retroperitoneal vermiform appendices play an important part in the causation of subphrenic abscesses. Kelly and Hurdon say: "The question whether the appendix is an intraperitoneal or extraperitoneal organ is chiefly decided by the position it assumes in relation to the cecum or colon, whether it is downward or upward; or, in more correct expression, early fusion between the colon and the posterior abdominal wall is apt to produce an ascending or retroperitoneal appendix, while late fusion brings about a pendant intraperitoneal appendix."

In Case 5259 the patient was 6 months old. The appendix was found in the ascending colon. The lower end of the ileum had passed upward through the ileocccal valve with the cecum into the colon. The appendix at its attached end had been inverted with the bowel. The half below the constriction was gangrenous. In Case 6432 the appendix was herniated through its own mesentery. It was not the seat of adhesions. In Case 5750, a case of gangrenous appendicitis, the cecal end of the appendix opened into a large abscess cavity in the liver. The opening in the

appendix corresponded to the site of the liver abscess.

In 20 cases the appendix was partially or completely obliterated. It is said that total obliteration of the canal insures perfect immunity from further attacks, but that if any portion remains pervious there is an increased disposition to other attacks. In nine of these cases the obliteration was due to an inflammation; in the others it was not determined whether the obliteration was inflammatory or involutionary in nature. In one case constriction was proximal to a concretion; in another the appendix contained mucoid material distal to the constriction; in one the end distal to the constriction contained pus. The appendix was found kinked in 20 cases. Some of these bends and kinks were due to inflammatory adhesions; some were due to a shortened meso-appendix. In 10 of these cases the kinking was inflammatory in origin; in the others reports are too meager to state the causes. Constrictions of the appendix were noticed in nine cases. They were all due to previous inflammation of the organ.

In these reports no case of supernumerary appendix is recorded. No case of absence of the appendix not attributable to appendectomy or sloughing was seen. Absence of the appendix due to operation was noted

21 times.

The size of the appendix is more variable than its position. Kelly and Hurdon agree with Ribbert, Berry and others in placing the average length of the appendix at about 8.3 cm., or between three and three and one-half inches. Schlange, in von Bergmann's Practice of Surgery, gives the average length as 9.2 cm., equal to $3\frac{1}{2}$ inches. In Case 6656 the length of the appendix was $\frac{1}{2}$ cm.; in Case 6791 the length of the appendix was 3 cm.; in Case 6107 the length of the appendix was 21 cm.; in Case 5616 the appendix was normal, but was 9 inches in length.

In the case of Isaac Williams, posted April 26, 1895, the appendix is recorded as having been 10 inches long. Long appendices are frequently bent on themselves or drawn up by the shortness of their mesentery into

various bizarre forms, as figure-of-eight or spiral.

Foreign bodies were found in the appendix vermiformis as follows: Grape seed, one case; fishbone (1½ inches in length), covered with concretions, one case; enteroliths, 25 cases. By enteroliths we understand fecal material which has undergone desiccation. The ordinary or normal appendix may contain fecal material similar to that found in the adjacent large intestine. Bryant found fecal matter in 70 per cent. of his adult specimens. In some of the cases reported above the enteroliths were single, in others multiple. In Case 5030 there were two large and several small concretions.

In these 3,550 autopsies the appendix vermiformis was reported to have been the seat of tubercular lesions ten times; Cases 5507, 6701, 5275, 5421, 6499, 6504, 6779, 6225, 5104, 5982. A fact worthy of note is that in each and every one of these ten cases the tubercular lesions in the appendix coexisted with tubercular lesions elsewhere in the organism; that in all of these cases tuberculous pneumonitis of one or the other variety was invariably present. Not one of these cases of tuberculous appendicitis was primary. They were all secondary, either by continuity of tissue, as extension from tuberculosis of neighboring coils of intestine, or by vascular transplantation. We are forced to state that tuberculosis of the appendix vermiformis is but exceptionally primary and isolated. In four of these cases the organ was free and non-adherent; in six it was adherent to some neighboring structure. In some of these cases the tuberculous process in the appendix vermiformis had led to the formation of caseous areas; in others to ulcer formation; in others simply to the formation of tuberculous granulation tissue. In some the process was limited to the internal coats; in others to the external coats; in others it involved all coats. In all these cases the tuberculous appendicitis was not productive of symptoms sufficiently marked to lead to its diagnosis during life.

In two cases, 5305 and 5912, the appendix was the seat of typhoidal disease. In both of these cases typhoidal lesions in other parts of the abdomen coexisted, as in the intestines, mesenteric glands, spleen. In Case 5305 there was submucous hemorrhages; in Case 5912 ulcers were present. In Case 5272 there was a cavity between the folds of the meso-appendix, communicating with the lumen of the appendix, and containing thick pus.

The appendix was found, in 41 cases, to be the seat of acute inflammation, non-suppurative in character, that had not been pus-producing. In six cases pus was found in the cavity of the appendix, that is, in 6 cases we had an empyema of the appendix.

The appendix vermiformis was found three times to be the seat of neoplastic disease (Cases 6200, 6178, 6002). In each of these cases the neoplasm was a carcinoma. In each the appendix had been involved secondarily by the neoplastic process. In each the primary tumor was in the stomach. Benign neoplastic or sarcomatous change in the appendix was not found in any case. In two of the cases reported the tumor was apparently secondary by vascular transplantation; in one, secondary, due to extension by contiguity, the appendix being adherent to the stomach by the tumor mass.

The following figures show the great improvement in the understanding of indications for operation in appendicitis and for the performance of the various operations for this condition that has taken place during the last decade: Between the years 1893 and 1896 there came to the autopsy table at the Cook County Hospital 19 cases which had been operated on for appendicitis and in which suppurative peritonitis was present, while between the years 1896 and 1905, inclusive, there came to the autopsy table only five such cases. The operation performed in those days is best understood and appreciated by the following table taken from the postmortem records: Case of L. Jackson, March 20, 1895. In the right iliac region wound is found 7 cm. long, partly closed by sutures. Through this incision protrudes a loop of intestine and a gauze drain; appendix was found adherent to psoas, and had a perforation at lower third.

Operation for appendicitis. Case of L. Jones. Examination Feb. 10, 1895. In the abdominal wall in the median line an incision about four inches in length was found, packed with iodoform gauze. Omentum and intestines were matted together. Appendix was bound down to psoas and was red in appearance. Constriction about 34 cm. from tip.

General suppurative peritonitis. Case of J. G. Simons, Feb. 4, 1893. Appendix, colon and omentum found adherent in right iliac region. Appendix surrounded by granulating tissue. Looks, on separating adhesions, like a large ulcerating cavity.

Case of Joseph Kubat, April 7, 1895. In right lower quadrant 8-inch scar was found; omentum adherent to peritoneum under scar; appendix present and adherent to abdominal wall.

These postmortem records confirm the following facts concerning the appendix vermiformis: 1. It is almost always an intraperitoneal organ; exceptionally it is extraperitoneal, and then usually only partly so. 2. It has been found in nearly every portion of the abdominal or pelvic cavities. 3. It may form the contents or part of the contents of a hernial sac. 4. Its presence in a hernial sac does not render it immune from the lesions to which it is subject when normally located. 5. It may be adherent to any intraperitoneal organ or structure. 6. It may be adherent to some extraperitoneal structures, kidney, retrocolic cellular

tissue, etc. 7. Pathologic conditions have been found which seem to indicate that inflammations can extend from it to neighboring organs and structures to which it is adherent, and vice versa. 8. In diagnosing obscure abdominal and pelvic conditions the probability of a previous or of an existing appendicitis must be considered. 9. Pus may be present within the cavity of the appendix, within the walls of the appendix, or the condition of peri-appendiceal abscess may occur. 10. Inflammations of the appendix may terminate in resolution, in adhesion formation, in obliteration of the appendix, partial or complete, in interstitial thickening, in gangrene, ulceration and perforation of the organ; may terminate in suppuration. 11. One attack of appendicitis predisposes to other attacks until complete obliteration of the lumen of the appendix has taken place. 12. The condition of supernumerary appendix does not oceur. 13. Congenital absence of the appendix, if it occurs, is so infrequent as to be ignored from a clinical standpoint. 14. The appendix may vary in length from ½ cm. to 26 cm. 15. The lodgment of foreign bodies in the lumen of the appendix is an infrequent occurrence, only two eases, excluding enteroliths, having been observed in 3,560 cases. 16. Neoplastic disease of the appendix is uncommon. We are inclined to think that neoplasms of the appendix are almost always secondary either by continuity or contiguity of tissue or by vaseular transplantation. We have never met with a primary case. Primary cases, however, have been reported. 17. This organ may be the seat of lesions of the same nature as ean occur in other portions of the alimentary canal, viz., typhoidal, tubereular, actinomycotic, dysenteric, etc. 18. Tubereulous appendicitis is almost invariably secondary. 19. The lessened frequency during the last decade of diffuse suppurative peritonitis following operations for appendicitis is due, first, to the more exact diagnosis; second, to earlier operation; third, to excision of the appendix and of its mesentery in cases not complicated by peri-appendiceal abscess; fourth, to better and more perfect technie on the part of the operator. 20. Surgical intervention should be limited, in eases of peri-appendiceal abscess, to ineision and evacuation and drainage of the pus cavity if the appendix be not easily accessible.

A PLEA FOR THE OPEN TREATMENT OF FRACTURES. G. M. Peairs, M.D.

JOLIET.

It has been my lot to attend, during the past few years, a great many fractures, and I have had a rather varied result until I adopted more radical measures to secure better results. The use of the x-ray for diagnostic purposes has led many surgeons to realize that their best efforts produced but poor results. The difficulty of securing complete reduction and perfect approximation is shown. Exuberant callus proved to be displacement of fractured ends or comminution of fragments at the seat of fracture. Scudder's statistics in non-operative cases show poor results in 81 per cent. of fractures of the hip, in 69 per cent. of fractures

of the thigh in adults, all in old age; in 60 per cent, in closed fractures of the leg and in 79 of compound fractures. The financial depreciation of a patient who is a mechanic has been estimated to be about 70 per cent, in fractures of the tibia and fibula. Since antiseptic methods of treating compound fractures have been generally used the mortality has fallen from 68 per cent, to 2 or 3 per cent. These figures must remove the former opposition of surgeons to the open method of treating fractures.

With these facts before us, we ask, What is to be gained by this method? We gain accurate apposition of fractured ends. prevention of subsequent deformity, retention in position of the bony fragments, prevention of exuberant callus, of non-union and pseudoarthrosis, more rapid recovery, lessening of pain due to irritation of fragments not propearly approximated, full length of the fractured bone, better knowledge of proper application of proper retaining splints. The disadvantages of the open method are liability to infection, presence of scar and possibility of neerosis of the ends of the drilled bones. The disadvantages are

greatly outweighed by the advantage gained.

What may be overlooked by the closed method? Interposition of fascia, museles, vessels, nerves, comminuted fragments and blood clot, which may be troublesome if infection takes place, and improper alignment of the bones. All compound fractures should be treated by the open method and certain simple fractures should be made compound, viz., those of the patella, olecranon, oblique and spiral fractures of the tibia, elavicle with marked displacement, those of the skull with depression, upper third of the humerus and possibly supracondyloid of the femur. No surgeon should undertake this operation unless his experience has taught him the value of asepsis, and then only in a hospital or such private residence as affords a room capable of being converted into a proper operating room. Not one surgeon in this assembly will hesitate to open the abdomen for appendicitis, in the belief that the patient will recover, vet some of these same operators will hesitate to open a fractured leg for fear of infection. The danger of infection is praetically nil if properly done, and unless so done it had best not be done at all.

We will first eonsider time for operation and later the technie. In certain varieties of fractures, in which experience has proven that perfect position and retention can not be secured by eonservative means, an operation should be done at once or after an x-ray examination has been made. These include fracture of the olceranon, patella, spiral fracture of the tibia, etc., unless the patient is suffering from severe shock from the accident, as well as compound fractures. By so doing, reduction will be easily and positively accomplished and interposition of muscular tissue will be avoided, the full length of the fractured bone is preserved and time for repair is shortened. If shock be present and there is an abundant effusion of blood, the operation may be postponed a few days until the blood is absorbed, thereby lessening the danger of infection. If the operation is done at once, it is necessary to leave a drain to permit the escape of the blood. When the operation is delayed a few days or has been done secondarily for non-union. I do not employ a drain.

Technic of the operation. The skin for a considerable distance above and below the seat of fracture is scrubbed with green soap, shaved and followed by ether, alcohol and bichlorid. In recent compound fractures I enlarge the opening made at the time of the accident. In simple fractures I make an incision best suited to the case. Unless in the vicinity of large vessels, exsanguination by the tourniquet is not practiced, but bleeding is controlled by the hot sponges and forceps as it presents itself. Bleeding and the formation of large blood clots may follow the use of the tourniquet. This causes much pain and may saturate the dressings, necessitating their early removal. Make the incision large enough through the skin to expose the fractured ends and bring them through the wound if necessary. Separate the muscles in natural layers instead of splitting or cutting them. Detached fragments of bone should be removed. Bring the fractured ends into apposition and drill through the entire bone, not into the medullary canal as advised by some operators. This will prevent twisting of one fragment on the other and poor alignment. I use any of the modern instruments for drilling, such as the Brainard or Hamilton or ordinary carpenter's drill. The drill holes should be about onefourth of an inch from the fractured ends. Many forms of sutures are used, as silver wire, chromic catgut or kangaroo tendon, the latter being my preference. These are introduced through the holes by a short curved needle carrying a ligature holder, and the ligature is drawn through and tied or twisted in case silver wire is used. This firmly holds the fragments in correct position. Screws, metal ferrules or plates have been used, but the chromic catgut No. 4 or kangaroo tendon meets all requirements.

Occasionally, when a non-absorbable suture, as silver wire, is used, a necrosis about the drill holes, with a sinus remaining for a long time, delays in healing and finally separation of some bone follows. Again, when these wires are twisted, the operator is frequently chagrined to see the wires break, and all must be done again. I have experienced considerable trouble in getting a needle that would go through the bone easily and not break, and have devised the use of a silver probe with special eye. This is of small size and very flexible so that the end may be grasped by forceps under the bone and brought easily into the wound or bent in position to enter the other fragment on return. I believe all compound fractures should immediately be treated by some means of internal fixation in addition to the usual splint or plaster-of-paris dressing.

REPORT OF CASES WITH IMMEDIATE OPERATION.

T. C., superintendent of blast furnaces, was injured in an explosion Aug. 29, 1895. He received a compound, comminuted fracture of the right patella, with extensive laceration of the superficial tissues, the knee joint being freely opened. There was not enough of the patella left to recognize it. I saw him a short time after the accident and ordered him removed to St. Joseph's Hospital. The leg was thoroughly cleansed and many fragments of the patella removed. The largest part of the patella, that remained attached to the upper portion of the extensor tendon, was approximated with the largest part of it remaining attached to the lower portion of the tendon, drilled and fixed with silver wire, and the superficial tissues united with silkworm gut and the joint fixed with a plaster-

of-paris cast. On account of the joint being open, a drain of gauze was used in this case, and later a window was cut in the cast and dressings made through the window, as necessary. The wound healed as well as could be desired and he regained the full use of the knee and leg, being discharged from the hospital in seven weeks. He was later able to ride a bicycle and is as well as before the accident.

Case 2.—T. E., a carpenter, fell from a height of about twenty feet across a girder Jan. 10, 1904, sustaining a compound comminuted fracture of the left tibia and fibula. I saw him at Silver Cross Hospital a short time after the injury. There was an extensive laceration of all the tissues about four inches long on the anterior surface of the leg in the upper third. The fracture of the tibia was an oblique one in the upper third, the upper end of the lower fragment coming through the soft tissues on the external and anterior surfaces just below the articular surface of the joint, the fracture extending about three inches below and on the inner side. Much of the cancellated tissue of the head of the tibia was crushed and the extensor tendon was detached from the tibia. All of the comminuted bone was removed, the remains of the extensor tendon was attached to the upper fragment and the two fragments opposed, drilled and united with No. 4 chromic catgut. The lacerated tissues were united with silkworm gut and drainage was employed. On account of the great amount of tissue destroyed and removed, this case was a long time in filling in, but eventually I had the satisfaction of seeing this man leave the hospital, on June 28, with good union and perfect action of the knee. For some time, he stated, the knee was weak, but he returned to his usual work as a carpenter with a good leg.

This is one of the most severe cases in my list and I believe many

operators would have done an amputation at the start.

CASE 3.—F. H., a switchman, aged 18 years, was caught under an engine Feb. 18, 1905, and run over, sustaining a compound fracture of the right femur in the lower third. The quadriceps extensor muscle was severed and the muscles of the external and posterior region were lacerated, but not entirely severed. He had also a simple fracture of the right tibia and fibula in the middle third and a crushing injury of the left thigh in the lower third. The case appeared almost hopeless as far as saving the leg was concerned. Amputation of the thigh was considered, but the femoral artery had escaped serious injury and I resolved to make an effort to save the leg. The fracture of the femur was practically transverse, but I could not replace and retain the fragments in good position. Had I been successful in so doing they would have been disturbed by the frequent dressings that the case demanded. I cleansed the wound thoroughly, replaced the fractured femur, drilled the opposed ends and fixed with silver wire, united the muscles with chromic catgut, sutured the superficial tissues with silkworm gut and applied local fixation splints. Iodoform gauze was employed for drainage. Lateral splints were employed for the tibia and fibula. A Buck's extension dressing was applied and the patient put to bed. This case went on to repair in an ideal manner, the only complication being some little necrosis about the drill holes. Later the wire was removed and the necrosed bone chiseled away. This young man now walks as well as any of us with absolutely no shortening. The fractures of the tibia and fibula united with a perfect result.

Case 4.—R. J., a switchman, was run over by a car Aug. 1, 1905, sustaining a compound fracture of the left tibia and fibula. The frac-

ture of the tibia was a diagonal one and the soft tissues were severely lacerated. Amputation seemed to be the only procedure open to us, but the patient absolutely refused to consent to such treatment. We told him that he would not be able to retain the leg without considerable danger, but he was willing to take the chance and we made an effort to save the leg. I cleansed the wound, approximated the fractured tibia and fibula, drilled and fixed the bones with chromic catgut and sutured the soft tissues. Drainage was also employed in this case and the lateral splints applied. This patient was a victim of epilepsy, following a previous injury to the skull. Soon after the effects of the anesthetic had worn away he began to have convulsions. There was no limit to the number of them and no stated time of occurrence. These convulsions were followed by a delirium which lasted for three weeks, during which he got out of bed, removed his splints and walked to the toilet room, tearing out my chromic catgut fixation sutures. There was no infection in the wound to cause the delirium and we were at our wit's end to explain it. Nourishment was refused and nutrient cnema was expelled, so that it appeared that the patient would die from exhaustion. Large doses of iodid stopped the trouble, and on October 5 I again drilled the bones and put in silver wire, which held the bones in position. Convulsions followed the second anesthetic, but did not last so long as the first time. He made a good recovery, the union becoming firm and the leg full length. Wire was used in this case, and I again had a necrosis of some of the bone and had to remove it.

Case 5.—B. H., a pipe fitter, fell from the roof of the blast furnace Nov. 10, 1905, and sustained a compound fracture of the left tibia and fibula in the lower third. The laceration of the soft tissues was about four inches long on the inner side. I saw him a short time after the injury. He was removed to the Silver Cross Hospital, where the radical method was at once practiced. The wound was thoroughly cleansed, the fragments approximated, drilled and united with kangaroo tendon and silkworm gut used to close the wound. Drainage was used in this case for a few days, as there was considerable hemorrhage. The wound healed primarily and a cast was applied. He was sent home in three weeks, wearing the cast. This was a very severe injury, but he received only four or five treatments before the east was applied and none after. He returned to his work with no shortening and perfect union.

Let us now consider those cases which were operated secondarily.

Case 6.—G. W., a laborer, was injured by a fall from the loading dock Nov. 25, 1905, and sustained a simple fracture of the left olecranon. The arm was dressed with an anterior splint, fixing the elbow, and at the end of four weeks removed with good union and passive motion advised. The next day after the splint was removed he started out for a walk and slipped on the ice and fell, striking the same elbow and refracturing the olecranon. I again applied the splints, but could get no union. After four or five weeks I advised him to submit to an operation, but on account of his age, which was 68 years, and danger of an anesthetic, as he has a bad heart, he was loath to undertake it and was still hopeful that union would take place. On Feb. 25, 1905, he entered the Silver Cross Hospital, and on the 27th I operated on the elbow under local anesthesia, drilled the separated fragments and united them with silver wire and applied a light plaster-of-paris dressing. He left the hospital March 7, still wearing the cast, which was later removed, leaving a good bony union and a perfect joint. The wire remained in this

ease and gave us no trouble. He returned to work in about two months

after the operation.

Case 7.—J. T., a teamster, was injured Sept. 19, 1904, by one of his horses jumping on him in the stall. He sustained an oblique compound fracture of the left tibia and fibula in the middle third. He was taken home and I saw him in a short time after the accident. There was an opening in the skin about an inch long, caused by the upper end of the lower fragment. The wound was cleansed and lateral splints applied. I saw him regularly for four weeks and he secured a good union of the fibula, but not of the tibia. I then rubbed the ends of the fractured tibia together, hoping to stir up enough reaction to secure some union, and applied the lateral splints, but was disappointed a second time. I then urged an operation, believing that to be the only means of securing union. After some delay he consented and was removed to the Silver Cross Hospital November 16 and operated November 18. I told this patient I thought there was some unuscular tissue between the ends of the bone, and the operation proved this was so. This tissue was removed, the tibia drilled and chromic catgut used to bring the fractured ends together, with the result of a good union and primary healing of the superficial tissues. He remained in the hospital six weeks and was discharged, wearing a light cast. He is doing his regular work with a good leg and no shortening. His recovery was prolonged by a slight skin complication after the wound healed.

Case 8.—C. H., a foreman in the mill yard, fell into a manhole May 2, 1905, and sustained a simple fracture of the right tibia and fibula in the lower third. He was removed to the Silver Cross Hospital and lateral splints applied. At the end of four weeks no union had taken place and the ends of the bones were rubbed together and the splints reapplied, but no union followed. This case was operated on July 11 and muscular tissue with fascia found between the ends. This tissue was removed and the bone drilled and united with chromic catgut. The superficial tissues were united with silkworm gut and a light cast applied. On account of a slight skin infection, I cut a window in the cast and inserted drainage for a short time. This case made a complete recovery with no shortening, although an oblique fracture. He was discharged

from the hospital September 2 and is doing his regular work.

Case 9.—A. B., a bridge earpenter, 22 years old, was thrown from a bridge by a heavy timber July 3, 1905, and sustained a compound fraeture of the right fibula and tibia in the lower third. On account of a small wound made in the skin, I resolved to try the expectant plan and applied the usual fixation splints. The wound healed nicely, but at the end of seven weeks he had only partial union, although the ends of the fragments had been rubbed together after four weeks. August 17 I operated on this case and found the interposition of some muscular tissue prevented any better union. As in the previous cases, this tissue was removed, the bone drilled and united with kangaroo tendon and a light east applied. There was an ideal healing in this case. He left the hospital October 13 with good union, full length, and is following his regular occupation.

I have given above the history of nine cases and wish you to note the result of Case 5 as an example, in which the immediate operation was done in a compound fracture, with a disability of three months in comparison with Cases 7, 8 and 9, similar injuries in which the secondary

operation was done with a disability of about six months.

NATURAL, TEMPORARY OR ACQUIRED AND ARTIFICIAL IMMUNITY.

HELIODOR D. SCHILLER, M.D.

CHICAGO.

It is a well-established fact and known for centuries that some persons, certain races or whole classes of animals are resistent or immune to certain infectious diseases. We call this quality immunity. It may be a natural or an acquired immunity. The latter is acquired either by overcoming an infectious disease or by artificial immunization. The natural immunity, in general, is to be found only in whole species of animals or in certain races. To call the immunity of a single individual or animal outside of his species, against a certain infectious disease, natural immunity is not correct. The immunity of men from the cattle plague or of animals from syphilis are examples of natural immunity. This immunity is not always an absolute one, as certain noxiousness, like starvation, exhaustion or cold. might reduce the natural resistance, or a large quantity of a highly virulent material may produce infection in an animal, which generally would be immune against that particular disease. Chickens are immune from anthrax if their temperature is kept low by long cold baths. We also find the same condition in rats, pigeons and frogs. The protective apparatus in our bodies must be divided into an external and internal one. In the external one, we count the normal integument, the hydrochloric acid in the stomach, the mucous membranes and the action of the ciliary fibers. Besides these, there are internal preventatives, which have the power either to destroy the invading bacteria or their toxins. We have to distinguish between immunity against bacteria and immunity against their toxins. Both are entirely different. To understand this, we have to look at the entirely different ways in which bacteria do their deadly work in the body. For instance, in a case of anthrax, we find an abundant amount of anthrax bacilli inundating the blood. On the other hand, in a case of tetanus, we find bacilli only at the infected place, while in the blood are circulating the toxins produced by the tetanus bacilli. These two examples represent the two different methods of diseases produced by bacteria, the former the infectious diseases, the latter the disease produced by the toxins of the bacteria. It is a positive fact that in the infectious diseases, at least in the last stages of the illness, it is not the bacteria, but their toxins that produce death. Nevertheless, the two divisions have to be made and, according to this division, the immunity may be against the toxins or against the bacteria. Under the first we have to include the immunity against ricin, arbin and certain animalic poisons.

We will now consider the natural immunity against bacteria. Metschnikoff's theory of the phagocytosis is well known, and I will not go into detail. It has been proven by many experiments and observations that leucocytes play an important rôle in immunity. On the other hand, Buchner was able to show that the blood-plasma and blood-serum have strong bactericidal power. He called these bactericidal principles "alexins." He believes that the natural immunity depends on the amount of

alexins in the serum. The alexins have no specific action against certain bacteria and differ to this extent from the antibodies, the preventatives of acquired immunity, which show specific action. Were Buchner's theory a fact, we would have to demonstrate that the serum of animals or men, immune against a certain infectious disease, would show the strongest bactericidal action toward their toxins. But this is not the case. For instance, while the serum of rats kills anthrax bacilli, against which rats are immune, the serum of rabbits, which are very susceptible to anthrax, kills anthrax bacilli still more quickly. There could be many examples mentioned where animals are immune to certain infectious diseases, but their serum has hardly any bactericidal power against the specific microbes. This shows that the alexin alone can not explain natural immunity. At present we do not know how much of Metschnikoff's or Buchner's observations or a combination of both, as suggested by Buchner, can be taken as a satisfactory explanation. An interesting fact worth mentioning is the high bactericidal power of the serum of nursing children. It would assist us in explaining the comparatively high resistance of nursing children against infectious diseases.

The natural immunity or resistance against diseases which is produced by the toxins of bacteria can be produced by substances that work against the toxins, antitoxins or, as Ehrlich explains it, through the entire absence of points where the toxins could attack. Behring explains this by a supposed congenital insensibility of the cells against the toxins. The simplest explanation of natural immunity would be the supposition of antitoxins, but, in reality, there are no such antitoxins to be found. We can not find a trace of antitoxin of tetanus in the blood of chickens or turtles, although these animals are immune to this disease, nor can we find a trace of diphtheria antitoxin in the blood of rats, although they are immune to diphtheria.

Acquired immunity must be attained by overcoming an infectious disease, intrauterine life being included, or by artificial immunization. The immunity of one person or of one animal outside of its species against certain diseases is, in rare instances, a natural but almost always an acquired one. Speaking of the nature and cause of acquired immunity, we must again make a strict division between acquired immunity against toxins and immunity against bacteria. Kitasato and Behring found in the serum of animals (horses), in which they had injected a certain amount of diphtheria or tetanus virus, products which, if injected into other animals, would be able to protect them against newly injected virus. They called these products antitoxins. With a certain method of immunization, that of injecting increasing doses of antitoxins, they were able to make these animals immune against very high and under other conditions deadly doses of toxins. They found that the antitoxic substances are free in the blood serum of immunized animals and by the injecting of this serum into other animals they were able to make them immune against very high doses of toxins. But not only in the body of animals does the antitoxin show this quality, for in the test-tubes also it can be seen that toxin and antitoxin become engaged like a poison

and an antidote, they neutralize each other and have no influence against diphtheria or tetanus baeilli. Ehrlich showed that the union of toxin and antitoxin occurs like a chemical union, in a perfectly fixed proportion and following the law of the multiples. An important quality of the antitoxins is their specific action, the antitoxin of diphtheria acting only against the toxins of diphtheria, etc. I said that the immunity of an individual person or animal against a certain infectious disease can not be ealled natural immunity. In the serum of whole species of animals with natural immunity against a certain disease, antitoxins or bacteriolysins, the correspondent of antitoxins in cases of immunity against baeteria, have never been found. However, one of these antibodies will most often be found in the serum of an individual person or animal immune against a certain disease, outside of his species. If we find antitoxins or bacteriolysins against a certain infectious disease, then this person either withstood the disease once in life, the intrauterine life included, the disease took such a slight form that it was not discovered, or we must hunt for another reason, which will be easily found. In the nose and its eavities, in the mouth, throat and intestinal eanal, we find different and sometimes virulent and pathogenic bacteria. In some way or another, some of these bacteria may enter the body in an insufficient amount to produce the typical disease, but still enough to produce antitoxins. this process repeats itself often enough, antitoxins, sufficient to resist a much severer infection, will be produced, and in this manner Nature does what Behring did, in order to produce highly powerful diphtheria antitoxin, and the temporary immunity of an individual or animal is thus produced. With this I can explain the observations made by Wasserman, who found in the serum of perfectly normal individuals or animals antitoxins against diphtheria or tetanus, in the serum of individuals who, as pretended, never went through any of these diseases. The presence of these antitoxins can only be explained in this way: That the individual may have overcome a slight attack of one of these diseases or the antitoxins had been formed in the manner I have explained by a gradual immunization of the body. There is still another difference between natural and acquired immunity; the first one lasts for the entire life, while the acquired may last for the whole life, but, in most eases, lasts only a short time. The overcoming of searlet fever or typhoid fever usually makes the person immune against these diseases for their entire life, while the overcoming of diphtheria produces only a very short immunity. Again, the overcoming of some infectious diseases produces no immunity at all. We might, therefore, reserve the name natural immunity for the immunity of a whole species, and the name acquired, temporary or transitory immunity for the immunity of a single person. During a severe epidemic of scarlet fever in Witkowitz, in 1900, I observed the following, and I am convinced that other physicians have made similar observations: In a family of four children, three contracted scarlet fever and died, while the fourth child, who eame in closest contact with the others, isolation being impossible, remained well. The next year, during another epidemic, this child, 7 years old, took scarlet fever and died. How can

this be explained? The opportunity to infection in the first epidemic was more likely than in the second, the genus epidemicus in the first epidemic was more severe, but still the child was spared once to die during a much slighter epidemic. This temporary immunity is explained in the same way as the acquired immunity, by the formation of antitoxins through the presence of the specific bacteria in the body. I have observed that among 1,000 children of general practitioners there are 12 per cent. less infectious diseases than in any other 1.000 children. Everybody knows that children of physicians are much more exposed to infectious diseases than other children, and we should, therefore, expect a much higher percentage of infections among them. But a doctor's child, from its earliest infancy, becomes inoculated with small quantities of infectious material, not strong enough to produce the disease, but yet enough to produce antitoxins and producing acquired immunization. When we read that Landerer, by the injection of cinnamic acid, derives good results in treating tuberculosis and when we read that the injection of anthrax bacilli, in an extremity which was made very hyperemic by constriction, does not produce a general infection, we see that these proccedings are, in reality, means by which the normal preventives of the organism become increased and so produce immunization, in a general sense. The explanation of the above-mentioned proceedings is found in the increased blood supply and thus the increased supply of the bactericidal substances of the normal blood. Besides this general immunization, we have a specific immunization. This specific immunization can be a direct or indirect one, or, as Ehrlich calls it, an active and passive onc. We must again not forget to distinguish between immunity against toxins and immunity against bacteria. The ideal would be if we would have an immunizing substance which would combine both. This would be especially necessary when using the serum against typhoid fever or cholera. The latter immunizing scrums dissolve the bacteria and clear the organism from them, but this process is very fatal to the organism, since many toxins inclosed in the bacteria thus become free and kill the organism, as the immune serum contains no power against the toxins. Behring was able to make horses immune to the highest doses of diphtheria toxin by injecting gradually increasing doses of diphtheria virus. This process of immunization is called active immunization. Behring found that the blood serum of the so immunized horses has a strong antitoxic power against diphtheria toxin and is able to make a second or third animal immune. The immunity obtained in this way is established immediately after the injection and is called passive immunization. short, in passive immunization we bring the antitoxins which were built in another animal by active immunization after a long and dangerous process into the body and get an immediate result, free from all danger. Active immunization is dangerous and almost entirely abandoned for therapeutic purposes. It is, however, interesting to know that this was the earliest method of immunization. Several centuries ago variolation, which was nothing more than active immunization, was practiced. The earlier the antitoxin is injected the surer and better result is obtained.

If too large quantities of the toxin circulate in the blood, if too many cells are already attacked, if the haptophore part of the toxin is moored in great quantities, then the antitoxin can not act. Therefore, it is necessary to inject the antitoxin as soon as possible and in large doses. Doenitz's experiments are very instructive. He injected into rabbits seven times as large a dose as the deadly dose of diphtheria toxin, and. after ten minutes, he could still save these rabbits by injecting great quantities of antitoxin. The deadly amount of the toxophore part was not in action yet. After a period of 15 minutes he could still save these animals, but, if he waited a longer time, nothing could save them. If in doubt whether a case is diphtheria or not, I advocate the immediate injection of 2,000 units of antitoxin, without waiting for the result of the cultural examination. If the examination shows bacteria I advise, if necessary, another injection of 2,000 or 3,000 units, repeating this dose once or twice or oftener in severe cases. There is not one case known where the injection of the proper serum in the proper way did any damage except exanthema. On the contrary, we know that even in desperate cases high doses of antitoxin may help. There is not enough done for the immunization against diphtheria. If a case of diphtheria occurs in a family, nothing better can be done than to inject all the other children exposed with small doses of antitoxin, a precaution which is better than all isolation. Doenitz showed, by his experiments, why the antitoxin in cases of tetanus has never given as good a result as in diphtheria. Four minutes after injecting a mouse with tetanus poison the amount of antitoxin necessary to neutralize the toxin was not greater than the proportionate amount of toxin. Sixteen minutes later twelve times the amount of antitoxin was necessary to save the animal. The fixation of the toxin of the tetanus bacilli results very quickly, while its separation and neutralization afterward requires large quantities of a powerful antitoxin. We see from this that we must inject as soon as possible; if there is the suspicion that a wound may be infected with tetanus bacilli, a preventative injection of small quantities of serum will almost always give a positive result, while if the injection of serum is given after the symptoms of tetanus have developed, the result is very uncertain. This proceeding should become a rule, especially as no damage can be done. No better proof for this can be given than the experience of the obstetrical clinics in Prague. In the year 1897, while I served my term as surgeon at the German Obstetrical Clinic, an epidemic of tetanus broke out in the clinic under Professor Pawlik. In spite of the strictest separation, the epidemic spread to the German clinic. In order to stop the epidemic, the entire clinical building was remodeled, the floors were newly cemented. the furniture exchanged, the instruments renickled; in short, after six weeks it was practically a new clinic; nevertheless, tetanus started again and did not stop until a small dose of tetanus serum was injected into each woman in labor. After this had been done no more tetanus was observed.

Of great interest are the experiments of immunization against the venom of serpents. The serum against plague, the serum against botulis-

mus, tuberculosis—Tiszoin-Marziliano—the scrum against typhoid fever, eholera, etc., all these must be mentioned. The latter sera belong with the antistreptoeoceus serum among the bacterieidal sera, with only or ehiefly baetericidal power, while they are not or only to a slight degree antitoxic. The bacterieidal scra contain only the immunizing bodies, or the amboceptor, while the complement must be furnished from the body into which it is infected. Only when both act together can the bacteria be destroved. Whether the body will furnish the complement or not is a fact of which we are always in the dark, and, therefore, it was advisable to inject it simultaneously with the bacteriolytic serum, because the complements are very inconstant. But this complicates the process so much that it ean not be used in practice very well. Other things are to be considered. The baeteria which produce the maladies which we eall diseases by intoxication produce a uniform toxin, and, therefore, if the baeteria are of the same species as tetanus, diphtheria, etc., the antitoxin is a uniform one and acts against all kinds of toxins of the same species. We find, on the other hand. in baeteria which produce the so-ealled infectious diseases great biologie differences, even in the same species, differences which can be found in the serum also. Many authors who do not believe that the different streptoeocci belong to one uniform family say that antistreptoeoceie serum is of no value, because the serum reacts only to the homologous streptoeoeeus, which was used for producing the serum. This question is not solved at present, but, in my opinion, we will obtain results with the different streptococei sera as soon as we will be able to produce a concentrated serum. Until now the efforts to produce a high powerful serum are not far advanced, as ean be seen from the fact that it is necessary for Moser to inject 200 to 300 eubie em. of his antisearlating serum. In order to overcome these above-mentioned objections. the different authors use different methods. Moser mixes 7 to 14 streptoeoeeic cultures obtained from different patients. With this mixture he immunizes and he believes that this serum will contain enough partial immunizing bodies for the different kinds of streptocoeci which could have produced the disease. We could imitate this by injecting different streptoeoeei sera which are on the market into one patient, in accordance with Moser's idea. It is clear that the chances of a good result from the use of baetericidal sera depend to a great extent on the condition of the patient, as we know that he must furnish the complement. We, therefore, must use the serum as soon as possible in order to get the assistance from the body, and we must also use larger quantities than have been used heretofore. The eoneentration of these sera is low, and we must make this up by larger quantities of serum. The serum therapy of the bactericidal sera is certainly still in its beginning, but we hope to obtain from them the same good results gotten from the antitoxic sera.

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APRIL, 1906.

THE FIFTY-SIXTH ANNUAL MEETING.

The next annual meeting of the Illinois State Medical Society will be held at Springfield on the 15th, 16th and 17th days of May. The prospeets for a successful meeting are unusually good. The meetings in Springfield, because of its central location and ease of access, have always been especially well attended, and this year the meeting promises to be better than ever as regards the attendance and interest in the program. Since the last meeting held in Springfield in 1900 the membership of the state society has increased about 400 per eent. and the society has made notable improvements in many lines. The city of Springfield has, during this time, made a remarkable growth and is now a handsome place of 50,000 inhabitants, the third city of the State. The place of meeting will be the First Methodist Church, which is commodious and well adapted for the purposes of the sections, general meetings and exhibits. The thirty spaces allotted to exhibitors have already been taken. This alone is cyidenee of the interest which is being shown in business circles conecrning the meeting. At several recent meeting places it has been a difficult matter to secure the attendance of exhibitors, but at Springfield there have always been more firms wishing to exhibit than could secure space. The entertainment features will be well taken eare of. Tuesday evening the general meeting will be addressed by the president and by Gov. Charles S. Deneen, after which there will probably be a public reception. Wednesday evening the society will be taken on street cars to Washington Park, where a pienic luncheon will be served and a band concert given, followed by a vaudeville entertainment in the casino. This feature, which takes the place of the annual banquet, offers a better opportunity for the members to move about at will and become acquainted with each other amid pleasant surroundings.

The ladies will be specially entertained at an afternoon tea to be given at the lodge near the Lincoln monument on Wednesday afternoon. They will then be driven to the park to take part in the evening entertainment. All physicians are cordially invited to bring their wives with them. All will be taken care of comfortably as regards lodging and meals. The committee on halls and hotels is Drs. L. C. Taylor, H. H. Tuttle, D. M. Otis, Charles Graser, T. L. Perkins and A. L. Taylor, any one of whom may be addressed should any of our members desire particular accommodations. The sessions of the House of Delegates will be held at such times as will not conflict with the scientific sessions of the sections, and undoubtedly many important items of business will be disposed of. It is, therefore, necessary for each county society to have a delegate and an alternate present to represent it at the meeting of the House of Delegates at each session.

The railroad rate, as usual, will be one and one-third, on the certificate plan. Let each member be sure to secure a certificate in purchasing a ticket and turn it over to the representative of the railway company as soon as possible after reaching Springfield. The program appears in this issue of The Journal. All members of the medical profession, and especially all members of the state society, are invited to attend and take part in the meeting.

MEDICAL DEFENSE.

Two years ago the Illinois Medical Society appointed a committee to consider the advisability of medical defense in Illinois. This committee, after full consideration of the question, advises the society to undertake this work and recommends the necessary changes in the constitution and by-laws. Many county societies have already instructed their delegates as to how they shall vote on this proposition. Nevertheless, so much is involved that it behooves the membership, individually and collectively, to weigh carefully the arguments pro and con. To begin with, in those counties where there is no medical-defense organization at the present time an increase of \$1.00 in the annual dues is necessitated. This will cause some members to complain and others to quit. Will it net us a gain or loss in membership? We are convinced that members do not

object to paying dues or to having dues increased if they can readily see a return for the money expended. It is the experience of those associated with the work of societies which have medical defense that nothing else brings in so many members or causes dues to be so promptly paid.

So far as we have been able to see, no other argument against medical defense is urged. The arguments for it are many. The defense which is given is composed in part of things which can be bought and in part of professional backing and unity. One dollar is not a large sum, but there are several contributing factors which increase its efficiency. For example, it is customary to reckon cost of collection and administrative expense against all funds. In our case these items are entirely eliminated. The dollar is net. The experience of Chicago Medical Society is that a reserve fund has been built up out of these single dollars and the defense given has not suffered in efficiency.

The efficiency is greatly augmented by the support of the profession. Service is gratuitously rendered which could not be purchased with any reasonable amount of money. This is true both of the actual trial of the case and of the preliminary conferences, through which most of the attending plaintiffs and their attorneys are convinced of the injustice of their positions. Largely by reason of these equations a better defense can be given for the small sum than is possible for companies collecting a larger fee. It may not be amiss to say that the influence of this stand together is excellent for the party sued, for the assisting physicians, for organization, for the medical public and, just as emphatically, for the general public.

Medical defense, in the main, is for the middle class of physicians. Suits are entered in hope of gain. However much the plaintiff may feel, the thinking is done by contingent-fee lawyers. These gentlemen know that the poor and irresponsible physician is not a fit subject. They also know that it does not pay to sue the man of wealth and influence. The usual suit is against the rising young man or the man of moderate means.

In addition to the individual work of defense, there are other avenues in which there is need for expenditure of effort. There are two kinds of law; the law of the statute book and the law of decisions. Whenever a decision is given against a homeopath or eclectic or regular there will probably be embodied therein one or more utterances of the bench which will be made use of in subsequent cases. There are very vital questions in such decisions, as that in the Pratt case and that in the Williams case. If physicians followed the rules laid down there many lives would be lost and the sum total of health and ease would be greatly lessened. On the other hand, there is scarcely a physician in the state but who, if held to financial accountability for all the cases in which he had violated the

rule in these cases, would be adjudged a bankrupt. The interests of the people demand a change in some of these rules made by decisions.

The committee will recommend a plan which it thinks best. It does not insist upon this plan. It will insist upon the principle that the best defense is an aggressive offense.

DR. M'CORMACK'S TOUR.

As announced in the March number of The Journal, Dr. J. N. McCormack, of Bowling Green, Kentucky, Secretary of the Kentucky State Board of Health and Chairman of the Committee on Organization of the American Medical Association, is devoting the month of April to organization work in Illinois. The itinerary laid out for Dr. McCormack provides for addresses in thirty-one towns in the state. As these meetings have been carefully arranged, it is probable that during the current month every physician in Illinois, who cares to, can meet Dr. McCormack and hear him discuss matters of vital interest to both the individual physician and the profession as a whole.

As a class, physicians are accused, often, it must be admitted, with reason, of being self-centered, self-sufficient, intolerant of criticism and lacking in interest in matters outside of their own immediate work. As a class, we are, perhaps, too little concerned with principles and conditions that affect the profession as a whole, and too much inclined to consider and be influenced by conditions which affect us as individuals. Dr. Mc-Cormack, in his work for the American Medical Association, has traveled all over the country, studying local conditions, discussing organization matters with physicians, and learning the actual conditions under which the average doctor lives and works. In fact, he may be said to have created the new specialty of clinical medical sociology. For, reasoning from abstract theories and assumptions, he has substituted deductions from facts gathered from a very wide range of observation.

That there are many matters in the realm of practical medicine today that need adjustment is admitted by all. Scientific medicine has won brilliant victories in the last twenty-five years. It will win still greater in the next quarter of a century. To the army of trained scientific workers this phase of professional progress may safely be intrusted. But practical questions involving professional economics affect every physician in the land. No man can do the best work of which he is capable so long as he is struggling with practical and financial difficulties. In proportion to the expense of preparation as well as the enormous amount of non-remunerative philanthropic work done by the medical profession, the financial returns to the average physician are far below what they should be. If the doctor were better paid, he could live better, have more leisure for study and research, and so be a better physician and a better citizen, of more value to himself, his family, his individual patients, and the state as well. This does not mean, necessarily, a raising of fees, in the individual ease. It means a regulation and readjustment of economic professional conditions.

As scientifie men, we must obtain faets before we construct theories. To avoid hasty generalization, our facts must be drawn from all grades of the profession, in all parts of the country. Before our local societies can legislate intelligently and effectively on lodge practice, contract practice, fee tables, insurance and corporation work, and all other questions involved in practical medical ethics, they must know whether the conditions that confront their members are local or general, what the causes of these conditions are, and how other societies have handled them. Only a man of professional training, broad sympathies, keen observation, judicial temperament and frank fearlessness, can supply the needed personal knowledge of local conditions throughout the country. If nothing else was accomplished thereby, the medical profession could well afford to send a man like Dr. McCormack over the country, in order to learn exactly the conditions that prevail in professional circles.

Having obtained this knowledge, he is now in a position to advise regarding existing local evils. Every member of every eounty society ean learn what difficulties and problems have been encountered by his professional brethren elsewhere and how they were solved. The public can learn of the relation which should exist between physician and patient. The bench, the bar, the clergy, the school board and its teachers, ean learn how they can best aid in raising the standard of health and happiness in their town or eounty. It is the unanimous opinion of the organized profession that, following Dr. McCormaek's meetings, a better feeling prevailed both among doctors and on the part of the laity toward doctors, that his talks have everywhere resulted in increased enthusiasm, stimulation of effort, and elearer ideas and plans of work.

It is earnestly hoped that every physician, and especially every member of every county society in Illinois, may attend these meetings, hear Dr. McCormack's talk and take part in the discussions that follow. Go yourself, take your wife, and invite your patients to go also. You will be a better physician and they will be better patients thereafter.

RESOLUTIONS REGARDING MEMBERSHIP.

At a meeting of the eouneil, held at Decatur, April 5, 1906, the following motion was made and unanimously carried:

"That the secretary be instructed to drop all names of members from the mailing list who are not paid for at the proper time, as defined by the by-laws, and not to add any new names that are not accompanied by the per capita tax.

"That when members are accepted in the first six months of the year

they must pay in full for the year, and in the second six months one-half the amount."

"Resolved, That it is the sense of the council that under our constitution and by-laws no one can be accepted as a local member of his county society who does not at the same time become a member of the state society."

E. W. Weis, Secretary.

REPORTS FROM DR. M'CORMACK'S MEETINGS.

As THE JOURNAL goes to press, the first ten days of the tour arranged for Dr. McCormack through Illinois has been completed. Reports sent in from the four Councilor Districts so far visited show that the meetings have been, as a rule, well attended and productive of much interest. In order that members of the state society in the other five districts may know the character and nature of these meetings, the following reports from the southern part of the state are printed herewith:

DR. M'CORMACK AT DECATUR.

In the afternoon on April 5 Dr. McCormack met the citizens of Decatur and vicinity for a "heart to heart" talk in the rooms of the Decatur Club. Forty physicians were present. All were delighted with his advice and suggestions for better organization, for more harmony and for golden-rule conduct of individuals, and for the formation of clinical societies to meet weekly, etc. In the evening, at 8 o'clock, he addressed an open meeting at the First Presbyterian Church, where an audience of three hundred citizens and physicians had gathered. It was a splendid lecture, and, in the language of a lady present, "you could have heard a pin drop." We are convinced that Dr. McCormack's best results can only be produced by a second lecture in each place. Before his lecture, no matter how well advertised, the public murmur, "Doctors' trust," and the press smile and say, "Patent-medicine crusade." After his talk, his hearers are convinced of his altruism, and a second appearance would give a greatly increased audience. The Association needs several more Dr. McCormacks for this work. It opens up a new career for a number of qualified men, and Dr. McCormack should be EVERETT J. BROWN. their teacher.

President Decatur Medical Society.

THE MEETING IN RICHLAND COUNTY.

Friday, April 6, the date of Dr. McCormack's visit to Olney and Richland County, is a day long to be remembered not only by the medical fraternity of this and adjoining counties, but by the members of other professions and by the laity in general, as well. Dr. McCormack's afternoon "heart to heart" talk was most entertaining and instructive and was heartily appreciated by the physicians present. His evening discourse on "Things about Doctors which Doctors and Other People Ought

to Know" was given before a large and most appreciative audience made up of men and women from all shades and walks of life. That his lecture was well received was evinced by the frequent outbursts of applause which greeted his many truthful remarks and by the public endorsement afterward given him in short speeches made by many of those present. His logic was clear and forceful, his reasoning plain, and his ability to convince conclusive. The profession has been doubly benefited by this visit, for in the afternoon, at the close of his remarks, the Rutland County Medical Society—a society not dead, but sleeping—was reorganized, and a committee appointed to form some plans for the carrying out of a systematic and instructive postgraduate course. The officers chosen for the ensuing year are: Dr. H. T. Watkins, president; Dr. George Weber, vice-president; Dr. E. H. Horner, secretary, and Dr. A. T. Telford, treasurer; censors, Drs. W. A. Thompson, M. D. Foster, and W. E. Fritchle.

NINTH DISTRICT.

It may be of some interest to the profession in other parts of our state to know that the McCormack meetings were a success in the Ninth District. The attendance was not large, of the twenty-three counties in this district about half were represented in the two meetings. Those who did attend carried away with them fresh enthusiasm for their professional work, new ideas as to how the local society may be made helpful and successful, and a determination to be strictly ethical at all times. The laity, as well as the doctors, greatly appreciated the evening addresses.

J. T. McAnally,

Councilor Ninth District.

DR. M'CORMACK'S LECTURE.

The people of Centralia have often paid fancy prices for tickets to hear noted lecturers and have not been either so well entertained or so profitably instructed as those who were fortunate enough to listen to the address of Dr. McCormack, organizer for the American Medical Association, delivered before a public meeting held at the Elks' hall under the auspices of the Marion County Medical Society.

The ordinary individual approaches a lecture from a medical man with fear and trembling. The surgeon's knife and the physician's lecture have equal terrors to the laymen. Notwithstanding this, the Elks' lodge room was comfortably filled and Dr. McCormack had a very good audience. When he began to talk he entirely dispelled any idea that his lecture was to be technical or academical. He went into the subject with the same vigor and freedom with which the woodsman wields his ax. The doctor stated plain truths in a blunt way, and spared no one, but at the same time his points were made in such a manner as to gain the sympathy of his hearers. Flashes of original and striking humor illumined the course he cut and slashed through the wilderness of ignorance.

He opened his lecture by laying the blame for most of the ills that affect the medical profession to the disposition of doctors to fight one another, and demonstrated that the only effective means of ridding the profession of this evil is by organization. The benefits to be derived by the general public from the strengthening of the influence of the medical profession were shown.

He declared that the state legislatures should enact laws for the prevention of diseases, and that if the influence of the physicians was what it ought to be these laws of health and sanitation might be passed. Consumption and typhoid fever are preventable diseases, produced by germs carried by mosquitoes, flies, or in the drinking water. This may be prevented by proper sanitary regulations. The startling assertion was made that in the Spanish-American war fourteen lives were lost through preventable diseases to one lost in battle, and the blame for this was laid directly at the door of the war department on account of its refusal to give the surgeon-general proper authority. The epidemic of yellow fever in New Orleans was said to be due to the refusal of the local authorities of that city to accept the report of the head of the local health board that yellow-fever germs are carried by mosquitoes, and adopt the recommendations made to prevent the distribution of the germs.

The State of Illinois was held up to derision as the haven of the quack doctor who was described as the man who robs the sick and afflicted. At this point Dr. McCormack turned his attention to the preachers and declared that the most dangerous quack doctors have in most instances been quack preachers. The ministers, church papers and religious societies were next put on the gridiron for helping to foist on an unsuspecting public patent medicines which are composed chiefly of poor whisky.

The lack of business methods in the profession was vigorously scored, and the speaker charged the 'doctor with being false to his trust who would not insist on being paid for his services enough to enable him to keep up with the remarkable advance of his profession. He declared that the diploma of a medical college issued many years ago doesn't make a man a doctor, but he must continue to study and to acquaint himself with the latest developments of the profession in order to render proper service to the families he treats. To do this the physician must charge good fees and collect them.

The address was fully worthy of reproduction in its entirety, as it treated wholly of matters of interest to the general public. Every one who heard Dr. McCormack was keenly interested in his vivid description of wrong conditions which exist, and his suggestions of remedies. If he should return to Centralia to repeat his address the "Standing Room Only" sign would have to go out early even if the opera house was secured for the lecture.—Centralia Democrat, April 5, 1906.

OFFICIAL PROGRAM

OF THE

FIFTY-SIXTH ANNUAL SESSION OF THE ILLINOIS STATE MEDICAL SOCIETY. TO BE HELD AT SPRINGFIELD.

MAY 15, 16 and 17, 1906.

SECTION ONE—MEDICINE.

PRACTICE OF MEDICINE, MEDICAL SPECIALTIES, MATERIA MEDICA, THERAPEUTICS, ETIOLOGY, PATHOLOGY, HYGIENE, STATE MEDICINE AND MEDICAL JURISPRUDENCE.

SECTION OFFICERS.

J.	Η.	Stowell		Chairman.
H.	Η.	Whitten	Peoria	Secretary.

No paper shall occupy more than twenty minutes in its delivery, and no member shall speak in the discussion of a paper more than five minutes,—(By-Laws).

PROGRAM.

TUESDAY, MAY 15TH.

1. Duties and Obligations Relating to Tuberculosis. C. W. Lillie, M.D., East St. Louis.

The paper deals with what may be termed the ethlcal aspects of the subject. It deals with the duties of parents and guardians; of teachers in our common schools; of employers of labor of all kinds; of city and county officials, and boards of health and overseers of the poor; of legislators, governors and others whose duty it is to promote the passage of laws for the preservation of the public health; of charitable persons in each community; of philanthropic and wealthy citizens; of managers of steam and street rallways; of hotel proprietors: of the individual in his personal habits; of all doctors, and especially members of state, county, and city medical societies; and more particularly the doctor's duty is to make sure of his diagnosis. Lastly, the duty of the doctor to instruct all others in regard to tuberculosis.

Discussion opened by J. W. Pettit, M.D., Ottawa; Clarence L. Wheaton, M.D., Chicago.

- 2. Etiology and Diagnosis of Spinal Tuberculosis in Infancy and Childhood. J. H. Hess, M.D., Chicago.
- 3. The Treatment of Congenital Syphilis in the Infant. I. A. Abt, M.D., Chicago.

(a) Introduction.

The indications for treatment. (b)Choice of drugs.

(c) Remedies employed.(d) Plans of treatment.

(a) Plans of treatment.
1. Continuous method.
2. Expectant method symptomatic.
3. Interrupted method (modified expectant.)
(c) 1. Based upon conception of morbid process constitutionally.
2. Based upon special manifestations.
(f) Preventive treatment.
1. General principles of prophylaxis.
2. Governmental prophylaxis (national, state and municipal).
3. Individual prophylaxis.
(g) Diet in Treatment.

- 4. Hysteria in Children. D'Orsay Hecht, M.D., Chicago.
- 1. Subject merits attention of general practitioner and specialist in pediatrics and neurology. Inquiry into hysteria in children has not been a searching one; general belief that hysteria is a malady of adult life. 2. Physical and mental factors condu-

cive to the development of hysteria in children. 3. Consideration of symptoms. 4. Hilnstrative cases. 5. Diagnosis, with especial reference to (a) exclusion of organic disease; (b) recognition of organic disease complicated by hysteria; (c) detection of simplication. 6. Prognosis and treatment in brief.

5. Intestinal Disorders of Children Accompanied with Diarrhea. J. C. Cook, M.D., Chicago.

The etiology, bacterial findings, pathological icsion; treatment, dietetic and medical.

- 6a. Principles of Infant Feeding. Frank X. Walls, M.D., Chicago.
- 6b. Some Practical Points on Infant Feeding. A. C. Cotton, M.D., Chicago.
- 7. Manifestations of Rheumatic Infection in Children. C. Martin Wood, M.D.,

Difference between adults and children in their reaction to rheumatic infection. extensive and lasting damage in the latter. Tonsilitis, endocarditis, arthritis, chorea and erythemas as rheumatic manifestations. Their differential diagnosis. Importance of recognizing mid and obscure cases. Marked tendency of some children to frequent outbreaks in one form or another. Due to lessened resistance, hereditary or acquired. Protection of heart and prevention of fresh attacks should be main object of treatment. The former secured hy rest and counteracting of poisons; the latter by hygienic management, especially of clothing, exercise and hathing.

8. The Attitude of the Physician Towards the Nostrum Evil. Charles Spencer Williamson, M.D., Chicago.

Discussion opened by O. B. Will, M.D., Peoria.

9. Disease in the Aged. W. H. Curtis, M.D., Wilmington.

9. Disease in the Aged. W. H. Curtis, M.D., Wilmington.

The senile individual offers, a priori, peculiar attractions for the pathologist and therapeutist, senility heing the incarnation of disease itself, and always a pathological, never a physiological process. Subject has not received attention it deserves. Literature so widely diffused as to make it practically unavailable to the general practitioner. Investigation shows that while the average age of the individual is gradually growing longer, this increase is confined to the periods of infancy, adolescence, and adult life, and does not apply to the aged. Etiology of senile disease frequently antedates the advent of years. Pathology and therapeusis quite well determined, but the idea that old age is a physiological process is still too much in evidence. The principal factor in senile disease is structural changes in circulatory system, superinduced hy action of poisons, introduced from without or generated within. Arteriosclerosis the product of not one, but many poisons. Methods for its early detection considered; the reliability of the sphygmomanometer and its effectiveness as a diagnostic aid pointed out. Those old in years and in their arteries not to be regarded as hopeless; much can be done to alleviate and cure chronic conditions. Difficulties attendant upon care of aged invalids shown to he many and peculiar, demanding exercise of infinite tact and patience. Drug treatment of the aged and some presumptive errors of text-hook teachings and general practice.

Conclusions are that while the first requisite for longevity is an inhorn, perhaps

conclusions are that while the first requisite for longevity is an inhorn, perhaps inherited, quality of tissue structure, it is still possible and frequently practicable to detect the onset of pathological processes in middle life whose development is synonymous with that symptom-complex known as old age. When a diagnosis is made, it is possible and frequently practicable to institute effective therapeutic measures. Study of processes of disease in aged, together with their therapeusis, offers rich field for research, and one that deserves more thorough cultivation. Our present knowledge needs revision, amplification, systematization. Third, the student of disease in the aged should be possessed of a peculiar mentality, liberal education, great resourcefulness, fact, natience and sympathy.

tact, patience and sympathy.

10. The Medical Treatment of Non-Operable Malignant Tumors. J. M. G. Carter, M.D., Waukegan.

The despondent attitude usually assumed in these cases. The nature of these growths. Antagonists to such growths. Opinions of eminent men regarding their nature and treatment. Report of cases, with the author's treatment.

11. Hygiene in Our Public Schools. W. S. Strode, M.D., Lewistown.

Cleanliness in and ahout the schoolroom; cleanliness of students: drainage; pure air; sitting posture of students; light; diet; cigarettes; guarding against epidemic diseases, etc.; sieep; cramming; etc.

- 12. Methuselah's Letter to His Son. H. S. Metcalf, M.D., Mount Carroll.
- 13. Adolescence. Frank Parsons Norbury, M.D., Jacksonville.
- 14. Some Phases of Modern Environment and Their Influence. W. C. Bowers, M.D., Decatur.

Hereditary dispositions and traits may be modified by environment. The first influence on the human being is through heredity. The child has a right to be well-born. Conditions influencing this. Everything should be sacred to the growth and

development of the child. At the age of three or four the child's ruling instinct is self-gratification. Sexual knowledge and ideas of chastity should be properly inculcated into the mind of every child. Conclusions.

15. Macroscopic Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner. A. M. Stober, M.D., Chicago.

Origin; development; perfection of technique; collection of blood; dilutions; necessity of uniform methods. Emulsions used; preparation of same; preparation now on market. Details of test. Significance of reaction. Practical results. Comparison with microscopic agglutination test. Suggestions for general adoption.

Discussion opened by Adolph Gehrmann, M.D., Chicago,

16. A Few Short Cuts and Useful Novelties in Laboratory Diagnosis. Weston Hall, M.D., Chicago.

Urinalysis. Methods for total in-mination. The Sahli Desmoid bag. Methods for total nitrogen, urea, uric acid and ammonia. Stomach examination.

17. The Necessity for and the Benefits to be Derived from a More Systematic Examination in All Cases. Asa L. T. Williams, M.D., Vandalia.

Illustrated by the failure to recognize and treatment of adenoid vegetations as nasal Illustrated by the failure to recognize and treatment of adenoid vegetations as nasal catarrh; failure in the early recognition of pulmonary tuberculosis, and treatment of appendicitis as acute indigestion. Emphasis will be placed on the necessity of making, where possible, a pathological and etiological as well as clinical diagnosis. The benefits to the patient are saving of valuable time, relief of suffering, and in some cases the saving of life. The benefits to the physician are the increase of knowledge and a stimulus to more reading and investigation, resulting in better service and the consciousness that we have done the very best for our patients and humanity.

Address. Tuesday night. Hon. Chas. S. Dencen, Governor of Illinois.

WEDNESDAY, MAY 16TH.

18. Lordosis, with report of case, M. S. Marcy, M.D., Peoria.

Cause. Muscles and nerves involved. Early diagnosis important, if relief is hoped Proper treatment.

Discussion opened by C. L. Mix, M.D., Chicago.

19. Newer Ideas on the Treatment of Obesity. Alfred C. Croftan, M.D., Chicago.

The science and the art of reduction cures. The calorimetric method. The three degrees of obesity and their management. The restriction of liquids; the element of exercise. The treatment of complications. Thyroid therapy. Results.

- 20. Some of the Problems of the Internist which Concern the Surgeon. J. F. Percy, M.D., Galesburg.
- 21. Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, M.D., Decatur.
- 1. Relative importance of HCl determination to other chemical findings and to

- physical examination of stomach.

 2. Errors in diagnosis from placing too much reliance upon HCl tests.

 3. Relations of HCl excess to so-called "bilious attacks," muscular rheumatism, gout, eczema, etc.
- 4. Value of HCl tests in hyperchlorhydria, achylia gastrica, gastritis, cancer, ulcer, neurasthenic gastrica.

5. Some new methods in diagnosis of stomach diseases.

- 22. Serous Inflammations.
 - (1) Pathology and Pathogenesis of Pleuritis, Pericarditis and Mediastino-Perdicarditis; Clinical and Bacterial Etiology. F. R. Zeit, M.D.,
 - (2) Cytodiagnosis of Pleuritic and Pericardial Fluids of all Sorts. A. A. Goldsmith, M.D., Chicago.

1. Survey of the literature.

- Reaction of tissues to bacteria.
- Application of these principles in cyto-diagnosis of pleural and pericardial fluids.
 Conclusions.
 - (3) Empyema; Pathogenesis; Pathological Anatomy; Symptoms, Diagnosis and Treatment. L. C. Taylor, M.D., Springfield.
 - (4) General Symptomatology and Physical Signs of Pleuritis, Mechanical Effects of Fluid and Special Symptoms. C. S. Williamson, M.D., Chicago.

- (5) Pericarditis; General Symptoms and Physical Signs; Mechanical Effects of Fluid Distention of the Sac. C. A. Elliott, M.D., Chicago.
- (6) Differential Diagnosis of Pleurisy, and of Its Various Forms, Including Empyema; Differential Diagnosis of Pericarditis and Its Various Forms. E. F. Wells, M.D., Chicago.
- (7) Treatment of Pleurisy and Pericarditis, and of Their Various Forms. N. S. Davis, M.D., Chicago.

23. Serous Inflammations.

- (1) Pathogenesis, Etiology and Pathology of Peritonitis. Wm. A. Evans. M.D., Chicago.
- (2) Pathogenesis of Ascites. Theodorc Tieken, M.D., Chicago.
- (3) Cytodiagnosis of Aseitic Fluids. C. Koehler, M.D., Chicago.
- (4) General Symptomatology and Physical Signs of Peritouitis. C. L. Mix, M.D., Chicago.
- (5) Differential Diagnosis of Peritonitis and Its Various Forms. Ellis E. Kerr, M.D., Chicago.

Brief review of causes, origin and pathology of peritonitis; the symptoms and signs of acute general peritonitis: differential diagnosis; diagnosis of cause; some atypical cases of general peritonitis; the diagnosis of perforation in typhoid fever; specific forms of peritonitis: tubercular peritonitis; pathology, clinical symptoms and physical signs; differential diagnosis; gonorrheal peritonitis; pathology, symptoms and signs; pneumococcus peritonitis; pathology and clinical findings. Conclusions.

- (6) Medical Treatment of Peritonitis and Aseites. Wm. E. Quinc, M.D., Chicago.
- (7) Surgical Treatment of Peritonitis and Ascites. Weller Van Hook, M.D., Chicago.
- The Public Health and Marine Hospital Service: It's History and Some of Its Achievements. G. B. Young, M.D., Medical Officer in Command, Chicago.
- Facts and Fallacies Concerning Interstate Reciprocity in Medical Licenses. J. A. Egan, M.D., Springfield.

THURSDAY, MAY 17TH.

- 26. The Opium Habit and Its Treatment. George F. Butler, M.D., Winnetka.
- 27. How to Select Foods for Invalids. J. A. Wesener, Ph.C., M.D., Chicago.
- 1. Consideration of food values. How to arrive at making correct balanced rations. 2. Physiology of the intake and outgo. 3. The preparation of food from the standpoint of making it more digestible and assimilable. 4. The question of proper diet in diseases and in certain idiosyncrasies.
- Pain, with Its Indication. L. G. Vogt, M.D., Freeport.
 Relation to disease, and its characteristics in different diseases.
- 29. Pain as a Symptom of Kidney Disease. S. W. Hopkins, M.D., Walnut.
- 1. Definition of this term as applied to the present paper: Cramp, aching, teaderness, sorcness on motion, smarting and burning, tension, etc. 2. The misinterpretation of symptoms and signs by the patient. 3. Pain which (a) is indicative of kidney disease, near or remote. (b) is not indicative of kidney disease, near or remote. 4. The value of pain as a danger signal of kidney disease as compared with some other symptoms and signs. 5. Some illustrative cases. 6. Conclusions. 7. Authorities.
- 30. Diabetes not a Discase per se, but a Condition, Accompaniment or Sequela of Several or Numerous Different Diseases. S. A. Oren, M.D., Lewistown.

Diabetes mellitus from the earliest mention ln our medical literature, showing how several of our forefathers in medicine considered it, and how they arrived at their conclusions; several of their experiments and observations; calling attention to efforts made to change the meaning of the name, in order to have it conform to modern observations—comparing the conditions and history to that of dropsy. Suggesting a new definition for the condition in preference to garbling our language and nomenclature.

31. Modern Conceptions of the Metabolism of the Diabetic. Ralph W. Webster, M.D., Chicago.

Definition of diabetes. Giycosuria: Conditions under which it may occur in the non-diabetic and in the diabetic. Theories regarding giycosuria. The acetone bodies. Importance of ammonia determinations. Coma diabeticum. General metabolic changes in dlabetes.

- 32. Treatment of Bright's Disease. O. W. Ferguson, M.D., Mattoon.
- 33. Some Important Phases in Therapeuties. A. R. Spriggs, M.D., Flora.

Therapeuties too much neglected in our medical colleges. Practitioners are too much given to routine methods in prescribing, and not as well versed on effects of remedies used as they might be, and not sufficiently careful in selections as to quality and pushing

- 34. The Progress of Scrum-Therapy During the Last Year. E. R. Larned, M.D.,
- 1. Classification of sera as to their being efficient or Inefficient. 2. Efforts to produce new sera. 3. Efforts to improve sera which have been inefficient for the purpose intended. 4. Investigations into the possibility of making efficient antigonorrheal and antisyphilitic sera. 5. Modifications of the Widal test for the diagnosis of typhoid fever. 6. Wassermann's serum in the treatment of diphtheria.
- 35. Medical Side of Ophthalmology. J. F. Burkholder, M.D., Chicago.

A plea for the ophthalmoscope as an instrument of diagnosis in the hands of the general practitioner.

- 36. Defects of Vision and Hearing in the Public Schools.
 - (1) Visual and Aural Defects, and Their Relation to Education. J. Whitefield Smith, M.D., Bloomington.
 - (2) Reflex Nervous Symptoms of School Children, Due to Impaired Vision and Hearing. Frank Parsons Norbury, M.D., Jacksonville.
 - (3) Subjective Symptoms of Eye-Strain and Their Effects on the Pupil's Work. Albyn L. Adams, M.D., Jacksonville.
 - (4) Neglected Cases of Chronic Suppurative Catarrh of the Middle Ear, and the Effects Upon the School. Norval H. Pierce, M.D., Chicago.
 - (5) The Importance of Good Illumination, and the Proper Method of Lighting. James A. Egan, M.D., Springfield.
- 37. The Spirocheta and Its Relation to Syphilis. W. L. Baum, M.D., and F. Robcrt Zeit, M.D., Chieago.
- 38. The Rheumatie Discases. Benjamin Baehrach, M.D., Decatur.
- 1. Introductory. 2. Acute rheumatism. 3. Muscular and chronic articular rheumatism. 4. Rheumatoid arthritis. 5. Gonorrheal rheumatism. 6. Conclusion.
- 39. Arthritis Deformans. Edwin W. Ryerson, M.D., Chicago.

Definition. Classification of different varieties. Importance of differentiating hypertrophic from atrophic arthritis. Modern views of étiology. Autointoxication theory. Rapid survey of pathology, symptoms and diagnosis. Prognostic difficulties. Treatment. Uselessness of drugs. Results of serum treatment. Value of orthopedic measures.

40. Pneumonia. R. H. Bradley, M.D., Marshall.

Lobar or croupous pneumonia is the type treated of in this paper. Regarded as one of the acute infectious diseases. The different tesions and clinical symptoms; the direct results of a specific virus. Author will not enter minutely into the bacteriology of the subject, but would say that the pneumococcus discovered by Sternherg and rediscovered by Fraenkel, is generally believed to be the causal agent. The existence of the virus in the mouths and lungs of healthy persons seems to have a very important bearing on the origin of the disease. A chill may simply lower the resisting power of the iung to the pneumococcic invasion. Toxemia, and not the amount of lung involvement, should be the guide to prognosis and treatment. Symptoms and physical signs, a chili or rigor, and abrupt elevation of temperature. Headache, malais, loss of appetite, aching in the iimb, pain in lungs, expectoration rust-colored or red; skin dry. Treatment: Eliminants, stimulants. As to the results of different methods of treatment, thus far there has been no specific found. has been no specific found.

Discussion opened by H. W. Chapman, M.D., Whitehall.

- 41. Venesection: A Too Often Neglected Procedure. W. S. Harpole, M.D., Chicago.
- 1. General considerations. Many practitioners do not do venescetions under any circumstances. Little taught on the subject in medical schools. Merits of the measure as shown in the past. 2. Discussion of the indications; I. The indications which have heen accepted. II. The two chief indications to-day. (a) Circuiatory disturbances. (b) Intoxications. 3. Illustrative cases.

42. Exophthalmic Goiter. S. M. Miller, M.D., Peoria.

Exposition of the present status of our knowledge of the cause, the symptoms, and of the disease. The relation of the thyrold gland to metabolism; relation of the gland to the parathyrold gland. The various sera, used in the treatment of exophthalmic goiter. Organotherapy. The use of the x-ray. Comparison of results of treatment by the various methods. Comparison with the results of operative treatment. Report of three

43. Headache: Its Significance and Treatment. L. Harrison Mettler, M.D., Chicago.

Headache not a disease with a pathology and group of symptoms. Merely a symptom. As a symptom merely, it calls for no diagnosis; diagnosis involves only the cause of the headache and the disease of which it is a symptom. A conception the reverse of this is too often the reason for the failure in the proper management of headache. The causes of cephalalgia and a working classification of them. The physiopsycho-pathology of headache and some time-honored errors in connection therewith. Prognosis as its basis. Treatment, irrational and rational.

44. What the Health Department of Chicago Has Done and Is Doing to Safeguard the Public Health, Charles J. Whalen, M.D., Commissioner of Health, Chicago.

SECTION TWO.

SURGERY, SURGICAL SPECIALTIES AND OBSTETRICS.

Chairman J. R. Christie, Quincy Secretary......S. C. Plummer, Chicago

Address-Some Hindrances to Surgical Progress. D. W. Graham, Chicago.

I. Peri-Rectal Abscess. Chas. J. Drueck, Chicago.

Will emphasize frequently overlooked details in the treatment of perirectal abscess and will take up the pathology, symptoms and diagnosis to the extent of making clear what is to follow. Under treatment will be considered the necessity of immediate evacuation. Facts and fallacles of different methods of obtaining drainage, with a few remarks relative to the method employed by the writer. Danger of autointoxication and pelvic congestion during the postoperative treatment and how prevented. How long and to what extent shall the patient be kept under control?

2. The Diagnosis of Brain Lesions Following Skull Fractures. S. M. Miller,

Skull fractures owe their importance to injuries to contiguous structures, the brain, its coverings, blood vessels and nerves. The diagnosis of skull fracture is the diagnosis of the associated brain lesion. Discussion of the diagnosis of (1) diffuse brain lesions, concussion, compression and contusion; (2) focal lesions, with illustrative cases of (a) concussion, followed by prolonged delirium; (b) concussion followed by compression from meningeal hemorrhage, with focal cortical lesion; (c) concussion, with focal lesions from basal fracture from involvement of the cranial nerves; (d) illustrating the confusion of simple alcoholics with those suffering from head injuries; (e) uremic coma simulating skull fracture.

3. Injuries of the Head. E. Sargent, Moline.

DIAGNOSIS AND TREATMENT.

1. Concussion.

Contusion.
 Compression.

(a) Depressed fracture.

(b) Hemorrhage.

(1) Immediate.
(2) Delayed (meningeal).
4. Fracture of base.

4. The Brain a Good Field for Surgery, as Shown by Its Disregard for Traumatism. C. D. Center, Quincy.

1. An effort to show, by numerous well-authenticated cases of traumatism, that 1. An effort to show, by numerous well-authenticated cases of traumatism, that many portions of the brain need not be considered vital parts; that less reluctance should be shown by surgeons in invading the brain, under antiseptic precautions, the argument being based on the insensitiveness of the brain to injurles.

2. The reason for much unsatisfactory brain surgery in the past is that operative measures have been used too much as a last resort, instead of a first resort, and operation has been done in the presence of inflammation, sepsis, or both.

- 3. Report of a case of gunshot wound of the brain, where the ball traversed the brain once in antero-posterior diameter, and partially traversed again in richochet. Skiagraphs of head of patient at present time with some interesting phenomena noticed during the progress of the case.
- 5. Notes on Renal Diagnosis with Reference to Nephrotomy, Nephrectomy, Nephrorrhaphy and Plastic Pelvo-Ureteral Surgery. Frederick A. Leusman,

The objective evidences of urethral, prostatic, cystic, ureteral and renal lesions. Comparison of methods for collecting separately the urine from each kidney, i. e., urine segregators and ureter catheterization. Reference to cryoscopy of the urine and blood, indigo-carmine and methyline blue and phloridizin tests. Difficulties of renal diagnosis despite all these tests, skiagraphy included. Problems for the surgeon. Associated surgical lesions. Preliminary diagnosis, diagnosis and surgical treatment on the operating table. Considerations and conditions pointing to nephrotomy, nephrectomy, nephrorrhaphy or plastic pelvo-urethral surgery. Difficulties in technic and end-results attending matter. Importance attending diagnosis and early surgical intervention.

- 6. Symposium on Fractures.
 - (1) Treatment of Compound Fractures. E. H. Ochsner, Chicago.

Definition, distribution, first aid. In what cases can the limb be saved and when is primary amputation justifiable? Method of disinfection, including prevention of tetanus. When to do plastic work for the repair of bones, tendons, nerves, etc. Method of drainage and wound closure. Secondary shock. Immobilization.

(2) The Use of Extension Frames in the Treatment of Fractures of the Thigh and Leg by Ambulatory Casts. Frederick Mueller, Chicago.

The ambulatory plaster cast the most convenient and natural treatment for all fractures of the thigh or ieg. Its application dangerous in some cases on account of possibility of disarranging fracture once set. Since many years apparatus have been constructed to overcome this difficulty. First apparatus that of Bruns, later on, Lorenz, who built an apparatus especially for the application of plaster casts after orthopedic operations. The author describes a new apparatus, which, besides showing all the advantages of the Lorenz apparatus, is especially built for the general use in the treatment of fractures. The setting of all kinds of fractures, even spiral fractures, can be accomplished by this apparatus with the greatest convenience for the surgeon, as well as for the patient. An exactness in the adaptation of the broken bones can be accomplished in a natural way, unobtainable by any other way of treatment.

(3) The Operative Treatment, in Fractures Presenting Obstacles to Reduction. Wm. Fuller, Chicago.

Introductory remarks. Importance of a correct differential diagnosis and proper selection of cases. Comparatively slight value of the fluoroscopic view or x-ray picture in fractures of this kind. Personal experience with this type of fracture. Safety of the operation as regards infection; technic of the operation. Literature of the subject. Conciusions.

- (4) The Roentgen Ray in Fractures. W. R. Cubbins, Chicago.
- (5) Pathological Fractures Resulting from Metastatic Carcinoma. A. E. Halstead, Chicago.
- 7. The Diagnosis of Abortion. H. I. McNeil, Newman.
- The frequence of abortion. The importance of diagnosis. Fallure 1. Introduction. to make an exact diagnosis.
 - 2. The essentials of a diagnosis.
 - (a) As to fact of abortion. Was the woman pregnant? Differential diagnosis. Injuries, tumors, spontaneous hemorrhage, etc.
 - (b) As to cause of abortion. Nature of the condition, accidental or induced, pathologic, traumatic, habitual, etc.
 (c) As to degree. Threatened abortion. Complete or incomplete retention of
 - membranes.
 - (d) As to sequeiæ. Infection, hemorrhage, element of prognosis.
 - 3. The means of diagnosis.
 - (a) Personal history. Statements of patients; statements of friends or family; physician's personal knowledge of case.
 (b) Symptoms: Pain, uterine contractions, hemorrhage, temperature, etc.
 (c) Physical signs: Prostration, dilatation of the os.
 (d) Anatomic diagnosis; gross and microscopic. Development of fetus, atrophled
 - fetus, etc.
 - 4. Medicolegal aspect: See Illinois Medical Journal, January, 1905.
- 5. Remarks in closing. Is diagnosis complete? Should we be more careful in making a dlagnosis?

8. Abortion. Le Roy Newlin, Hardinsville.

Causes. Effect on future health of individual.

Treatment. 1. Prevention, if possible. 2. Management when prevention is impos-3. After-treatment.

9. Problems in Appendicitis. H. N. Rafferty, Robinson.

Appendicitis question, although hackneyed, is unsettled in many respects, as shown by bedside contact with individual cases.

Nothing new to offer in the way of diagnosis or treatment.

All extremes have been reached in formulating methods of treatment, yet mortality prevails.

Difference between radical conservatism and conservative radicalism.

Difficulty in conduct of cases, due to inability to judge extent of lesions from either subjective or objective symptoms.

What is the remedy?

What is the remedy?

Difference between our theory and our practice.

Views from an English text-book.

Practical problems encountered in six years general practice.

Narration of parallel cases, as types.

Recapitulation.

When will these problems be solved?

- 10. Appendicitis Complicating Pregnancy and Labor. Effie L. Lobdell, Chicago. Symptoms, diagnosis and treatment. Three illustrative cases.
- 11. Angioma and Its Surgical Treatment, Carl Beck, Chicago.

Brief historical review. Present method of surgery of the angiomatous growths. Payr method. Wyeth method. Excision, electro-surgical method, my own method of subcutaneous excision and suture with gradual growth of normal neighboring skin.

12. Cholelithiasis. H. R. Lemen, Alton.

Frequency, as found at autopsy. Lack of symptoms in some cases until severe secondary sequelæ develop. Other conditions beside presence of gallstones needed to produce symptoms. Etiology: Theory of Galen, of Budd, of Morgagni, of Meckel von Hemsbach, present idea of stasis and infection. Bacteria and way of entrance into gall bladder, causes of stasis, predisposing causes of choleithiasis. Pathology: 1. Cholecystitis. 2. Cholangitis. 3. Hepatic changes. 4. Pancreatic changes. 5. Other changes. Diagnosis: Infrequency of icterus, Hamels and Riegius tests for bile differential diagnosis between plaundice of stone obstruction in common duct and pressure on same from without, differential diagnosis between choleithiasis and other diseases. Treatment: Preventive, palliative and radical.

- 13. The Induction of Premature Labor, Including the Vaginal Cesarean Section. Joseph B. De Lee, Chicago.
- 1. Definition. The artificial interruption of pregnancy after the viability of the child before term.

2. Indications.

- (a) Contracted pelvis. Abnormally large growth of child.
 (b) Diseases incident to pregnancy; as eclampsia, toxemia, placenta prævia, hyperemesis gravidarum, chorea, etc.
- (c) Diseases accidental to pregnancy; as tuberculosis, heart disease, blood dyscrasiæ, etc.

(d) Habitual death of fetus after viability but before term.

3. Conditions or prerequisites.

(a) Viability of child.

(b) Peivis not foo contracted

(c) Mother not moribund.

(d) Consent of mother and counsel.

4. Methods.

(a) Bougies (cause).

(a) Bougle and gauze tamponade (author).
(b) Bougle and gauze tamponade (author).
(c) Puncture of the bag of waters.
(d) Dilatation of the cervix and lower uterine segment by hydrostatic bags, etc.
(e) Mechanical dilators.
(f) Vaginal Cesarean section. Advantage and dangers of each procedure.

- 14. Shortening the Round Ligaments at the Internal Ring for Persistent Retroversion of the Uterus. F. H. Martin, Chicago.

The paper consists of a description of the technic of shortening the round ligaments through the internal ring, after opening the abdomen by a ventral incision. It is accomplished by making a stab wound through the aponeurosis of the external oblique at the point where it passes over the internal ring. Through this opening is passed a pair of sharp artery forceps, penetrating the peritoncum at the point beneath the internal ring, grasping the round ligament within an inch and a half of its insertion into the uterus and drawing the same through upon the aponeurosis and securing it there by means of a non-absorbable suture.

The operatiou is unique in its simplicity, the perfect security of the round ligaments, the employment of the strong ends of the round ligaments, and the shortening of the ligaments in the line of their normal axls.

1. Ascertain (1) Time of conception (2) Time of delivery.

General examination of (1) Mother.
 (2) Pelvimetry.
 (3) Baby.

3. Preparation for labor (1) Mother.
(2) Bedroom.

(3) Instruments.

4. Labor (1) Care of first stage.
(2) Care of second stage.
(3) Care of third stage.

5. Complications (1) Indications for forceps, Cesarean section, etc. (2) Placenta prævia.

Placenta prævia.

(3) Eclampsia.

- 15. The Surgical Treatment of Mother and Newborn Babe by the General Practitioner. J. J. Roach, Chicago.
- 16. Some of the Complications and Emergencies Met with in Surgical Treatment of the Ovarian Cystoma. G. L. Eyster, Rock Island.

Enumeration and description of various complications of ovarian cystoma: Twisting of the pedicle; hemorrhage into the cvst; infection and suppuration; adhesions; displacements, due to enlargement of other pelvic or abdominal organs.

A plea for the split flap method of relieving such sessile adhesions to abdominal viscera, as may endanger their integrity, by the ordinary method of enucleation.

A report of two cases illustrating some of these complications and emergencies.

17. The Need of Publicity in Venereal Prophylaxis. Denslow Lewis, Chicago.

The existence and detrimental effect of venereal diseases are acknowledged. The uecessity for education apparent. The public should know the possibilities regarding infection through impure intercourse and innocently. The Society of Sanitary and Moral Prophylaxis, organized a year ago, takes cognizance of existing conditions and seeks to remedy them by a diffusion of the knowledge we already possess and by scientific investigation of the economic, sociologic and pathologic conditions, which constitute the etiologic factor. The necessity of an active co-operation on the part of the profession is obvious. The need of interesting the public, so that active measures, largely educational, may diminish the ravages of the venereal plague is conceded. False modesty and mandful sentimentality must not interfere with a thorough knowledge Bress, largely educational, may diminish the ravages of the veneral plague is concedent. False modesty and maudin sentimentality must not interfere with a thorough knowledge of omnipresent danger, so that effective prevention may result from earnest effort. The duty of the profession in every township is to disseminate a knowledge of the truth. The necessity of active endeavor everywhere should excite every humanitarian to do his utmost, by a consistent prophylaxis, to diminish the ravages of these leathsome diseases.

- 18. Symposium on Surgery of the Prostate Gland.
 - (1) How Can We Secure the Co-operation of the General Practitioner in the Surgical Treatment of the Enlarged Prostate? Carl E. Black, Jack-

History of surgery of the prostate, with especial reference to surgical failures and their influence on the profession. Not surprising that it is difficult to have the present operations accepted. What proof is there of the correctiveness of the present surgical procedures? The influence of medical organizations in disseminating information and their uses for postgraduate instruction. The character of the men who should give such instruction. The apparent conflict between medical and surgical advice. The weakening-influence of division of the profession into societies and sections of specialists. The value of papers on surgical topics by general practitioners. The various side issues which prejudice us.

(2) The Present Status of the Bottini Treatment of Enlarged Prostate. F. Kreissl, Chicago.

Review of the recent literature on the subject. Discussion of the apparatus and its rious modifications. The operation and its underlying principle. Technic, immediations various modifications. Failures and fatallties, and their causes. ate and final results.

(3) The Passing of Perineal Prostatectomy. W. T. Belfield, Chicago.

1. Urinary retention in elderly men is caused by various conditious other than prostatic disease, including tabes, vesical sclerosis, calculus and carcinoma. These should be eliminated before prostatectomy is considered.

2. By perineal prostatectomy is understood the exposure of the posterior (rectal) surface of the prostate by incision through the perineal muscles, inverted V-shaped, enonilinears or other, and the removal of the adenomata through this posterior surface. This operation, so popular in recent years in France and the United States, has been abandoned by some of its former advocates, because it is followed in so many

cases by permanent urinary fistula, permanent incontinence of urine and troublesome cicatricial contraction (stricture) of the deep urethra, comprising probably 40 per cent.

cicatricial contraction (stricture) of the deep urethra, comprising probably 40 per cent. of those who survive the operation.

The reason for these sequelæ appears to be the extensive destruction of the perineal muscles and cicatrix formation.

3. A simple perineal urethrotomy, a clean median incision without destruction of the perineal muscles, suffices for the enucleation of prostatic adenomata into the bladder in many cases, without danger of permanent fistula and incontinence.

4. When the prostatic outgrowths are larger, especially the median lobe, they are best removed through a suprapuble incision. The mortality of the latter, formerly relatively high, was chiefly caused by septic infection of the suprapuble tissues through the urine. This infection is mlnimized by perineal drainage, the suprapuble wound being drained by gravity into the bladder, and thence through the perineal tube. Further security is obtained, if deemed necessary, by making the suprapuble existotomy in two stages. cystotomy in two stages.

5. These two operations should supplant perineal prostatectomy, first, because they are seldom followed by fistulæ, incontinence, etc.; second, because they are less severe, more quickly performed and require less anesthetic; third, because their mortality is

no greater.

(4) Contribution to the Surgery of the Prostate. M. R. Barker, Chicago.

Disarrangement and destruction of vesical structures in hypertrophied prostate and consequent functional disturbances. Postoperative urinary troubles are due to these conditions and not to the operation. What should be the attitude of the physician toward these patients when he first sees them and what may he expect from his patient from surgical procedures.

(5) Indications for, Limitations and Clinical Results of Prostatectomy. J. B. Murphy, Chicago.

Indications for prostatectomy are now well accepted and clean cut. The early operation is the one that precedes catheter life, severe vesical infection, not to speak of ascending pyelitis. The technical procedure as to route is always elective in the individual case. The results have been very gratifying:

- a. As to urinary continence.
 b. As to dispensing with catheter.
 c. Cure of suppurative cystitis.
 d. Absence of fistulæ.
 e. Prevention of epididymitis.
 f. Life saving.

There is no operation that taxes the surgeon's judgment as to the personal resistance equasion so much as the operation for prostatectomy.

- (6) Perineal Prostatectomy, the Operation of Choice. A. H. Ferguson, Chicago.
- 19. Vasectomy, with or Without Subsequent Anastomosis, with Special Reference to the Treatment of Certain Inflammatory and Neuropathic Disturbances of the Male Sexual Apparatus. G. Frank Lydston, Chicago.

ances of the Male Sexual Apparatus. G. Frank Lydston, Chicago. The operation of vasectomy is a legitimate means of relief for certain conditions. Cord operations in suitable cases have a profound influence on the innervation and circulatory supply of the prostate and seminal vesicles, and, incidentally, a marked effect upon nutrition must result. Vasectomy is not indicated in any case in which there is a reasonable probability of relief being afforded by less radical means. The operation, when properly performed, is practically free from danger. Vasectomy has a certain range of application in sexual neurasthenics, spermatophobiacs and in genuine spermatorrhea. The operation is of the greatest value in intractable chronic prostatitis and seminal vesiculitis. Its beneficial effects are due, not only to the change which it induces in the circulation and innervation of the prostate, but also to the rest which it secures to the seminal vesicles. Vasectomy has a certain range of application in suspected or known tuberculosis or malignant disease of the testis. In inoperable malignant disease of the prostate, with severe hemorrhages, vasectomy has, in the author's experience, been beneficial.

Technic of the operation of anastomosis of the vasa deferentia. In a certain as yet undetermined proportion of cases it is possible to so anastomose the divided vasa deferentia as to re-establish their continuity.

Of four cases operated on in this manner, one has shown a restoration of the function of the vas on one or both sides by the presence of spermatozoids. Of the other three, one is apparently a failure. There has been no opportunity to determine the condition of the remaining two.

the condition of the remaining two.

20. The Consideration of Serious Surgical Emergencies. J. A. Dav, Jacksonville.

The author emphasizes the extreme importance of prompt and efficacious treatment in all desperate surgical conditions, and recommends radical surgical interference in the majority of such cases.

It is admitted that such effort, in the great majority of cases of this character, is unattended with success, and usually brings discredit rather than glory to the surgeon. But, nevertheless, as experience has repeatedly proved that certain cases recover, where heroic surgical measures have been instituted in extremis, the fear of criticism alone should not cause him to refrain from making effort to save life. The cases that come under this heading are all dangerous surgical accidents, in the broadest sense of the word, viz., accidents that occur from direct traumatism, as well as those that arise as a result of a diseased process, pure and simple.

Attention is called to the fact that in serious accidents due to direct violence the surgeon is likely to be confronted by conditions where the exact gravity of the case and the urgent necessity for prompt surgical interference is self-evident; there is not the same necessity for good judgment, therefore, regarding the best course to pursue, as in those accidents due to disease in its strictest sense.

Undue haste in doing the protracted operation, after a severe traumatism during shock or transporting such a patient a long distance where surgical aid can be procured, save in exceptional cases, is strongly condemned. Perfect quiet and immobility, with appropriate measures for treating the shock and controlling the hemorrhage, if present, is advised instead.

The danger of terrorizing a patient and thus adding to the shock, under such circumstances, is referred to, and for this reason all nervous excitement should be

withdrawn.

The dangerous accidents that come about from disease, pure and simple, and the various accidents that do occur of this nature, are then considered, together with

appropriate surgical treatment.

The three great bugbears that usually occur and lessen the chances for recovery in such cases, viz., shock, hemorrhage and infection, are spoken of respectively, and

their treatment suggested.

The author concludes the paper by making a strong plea to the profession for keeping up the fight in desperate surgical cases, even in the face of what appears to be certain death, ignoring unjust criticism.

21. Sarcoma in Childhood; Report of a Case with Specimen. W. K. Newcomb, Champaign.

General characteristics of sarcoma. Modifications in relation to age. Causative features in development. History of case. Exploratory laparotomy. Propriety of operating on incurable cases for temporary relief. Exhibition of specimen from child 31/2 years old.

22. Injuries to the Pelvic Floor During Parturition. Frank C. Robb, Farmington.

I will confine myself to such injuries as are designated as perineal lacerations, the

I will confine myself to such injuries as are designated as perineal facerations, the frequency and results of the accident, predisposing and active causes, avoidable and unavoidable, with a special consideration of the forceps as a factor.

Methods of determining the character and extent of the injury, with a consideration of a special classification. Indications for primary and subsequent repair. A method for submucous denudation in secondary operation. A new technic for suturing sphincter-ani muscle. A general consideration of the after-treatment.

23. Treatment of Blenorrhea of the Lachrymal Sac, with Special Reference to Sac Extirpation. W. O. Nance, Chicago.

Chronic dacryocystitis an exceedingly annoying process, and a source of danger to the integrity of the eye. Course of the disease almost invariably obstinate, and frequently resisting for months and even years, treatment by probing, syringing and correction of nasai abnormalities. Removal or destruction of diseased mucous membrane of lachrymal-nasai duct positively obligatory, preliminary to operations upon the globe of the eye. Other indications for extirpation of sac. Some practical points suggested concerning the technic of the operation. Essentials of success in operating. Results. Changes in lachrymal gland following extirpation of sac.

- 24. The Operative Treatment of Chronic Discharges of Ear. A. E. Prince, Springfield.
- percentage of cases of middle ear discharge is due to chronic very large suppurative mastoditis.

suppurative mastoditis.

2. Complications which are liable to result when the disease is not controlled.

3. The results of the efforts of Nature in bringing about a spontaneous cure.

4. Duty of the surgeon to assist Nature.

5. The results of imperfect operations in which the surgeon has failed to remove all of the cells, and thus actually increases the danger of fatality.

6. Summary of points in the radical operation which are designed to bring about a permanent cure in the least possible time.

7. Illustrative cases.

7. Iliustrative cases.

- 25. Femoral Hernia. W. E. Schroeder, Chicago.
- 26. Gastro-Duodenostomy. Joseph B. Bacon, Macomb.

The new device for anastomosis that I will show is based upon the principle of catching all of the connective tissue of the walls of both stomach and intestine in the grasp of an elastic ligature, and thus compressing them against a metal cylinder as a base until pressure necrosis of this tissue takes place.

A part of this operation is done intragastrically, so that the ligature and the dumb-beli cylinder are both left within the intestinal canai. The cylinder being hollow, enables one to use it when there is complete stenosis of the pylorus.

A specially devised forceps is used to crush the muscularis and mucosa in a circle, so that the ligature may be securely tied around the dumb-bell handle.

All of the connective tissue being thus grasped in one ligature, makes an absolute barrier against infection and leakage, and at the same time assures a firm coaptation for from three to five days, while the new lymph is becoming organized. By this method we are also enabled to elect any point of the duodenum for anastomosis.

27. Hoarseness as a Symptom of Malignancy of the Larynx. O. J. Stein, Chicago.

Owing to the frequency of chronic hoarseness, its significance as a forerunner symptom of malignancy is commonly overlooked. Necessity for the greatest degree of detail in the examination of the larynx, as well as repeated examinations at short intervals, in order to clear away any doubt in the diagnosis. The diagnosis must be established at the very earliest possible time in order to reap the greatest chance of benefit. The simplicity of treatment, with a high percentage of cure, when the diagnosis is made early, compared with an almost hopelessness where the diagnosis has been delayed. Owing to the frequency of chronic hoarseness, its significance as a forerunner symp-

28. Surgical Aspects in the Aged, Based on an Observation of Four Years' Service as Assistant Surgeon to Illinois Soldiers' and Sailors' Home. Geo. E. Rosenthal, Quincy.

Character of operations in this service. Preponderance of amputations and miotomles. Contraindications for frequent surgical intervention. Aversion of these herniotomles. patients to operation. Results obtained.

- 29. Symposium on Carcinoma.
 - (1) Popular Agitation for the Early Operative Treatment in Carcinoma. G. N. Kreider, Springfield.

- Cancer a frequent and increasing disease.
 Remarkable superstitions about the disease.
 Not so fatal as generally supposed.
 Need of teaching physicians and public the early symptoms.
 Great number of totally uneducated persons using the strongest, most painful means of treating the disease.
 Use of salves and washes that are entirely useless.
 All abnormal growths should be extirpated early.
 Early extirpation of cancer absolutely necessary.
 Inoperable cases should be treated and the patient be given hopes of recovery.

- (2) Carcinoma of Intestines. Weller-Van Hook, Chicago.
- (3) Carcinoma of the Gall-Tracts and Liver. Bayard Holmes, Chicago.

Carcinoma as an increment in the indications for the early treatment of cholecystitis and the prevention of advanced cholelithiasis. Percentages of carcinoma in biliary apparatus with and without previous cholelithiasis. Location of primary carcinoma in biliary tract, diagnosis and treatment, results of treatment.

(4) The Operative Treatment of Superficial Carcinomata. D. N. Eisendrath, Chicago.

By superficial carcinomata are understood those of the lip, tongue, car, extremitles By supernical carcinomata are understood those of the lip, tongue, car, extremitles and external genitalia. The reason for recurrence, in many of these cases, is that no attention, or but little, has been pald to the removal of the secondary deposits in the surgical anatomy of the lymphatic supply of the above regions. A plea for a thorough removal of the secondary foci, simultaneously with the extirpation of the primary growth. The two operations can be readily done at one sitting. The extirpation of the lymph nodes, preceding that of the primary tumor, on account of the lesser danger of infection of the operative field. Description of the technic as used by the author in his work during the past years.

- (5) The X-Ray Treatment of Cutaneous Carcinoma. E. A. Fischkin, Chicago.
- 1. As a curative measure.
- 2. As a preoperative measure.
 3. As a postoperative measure.

30. The Logic of Abdominal Pain. J. L. Wiggins, East St. Louis.

Its proper understanding dependent upon a mastering of the fundamental facts. Location, age, sex and history, in connection with objective signs, necessary for definite diagnosis. Misspelled pain a cause of error.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular meeting of the Adams County Medical Society was held March 19 at the Elks Club in Quincy, with President Koch in the chair. Those present were Drs. Ashton, Becker, Christie, Ericson, Fletcher, Hart, Koch, Nickerson, Pfeiffer, Robbins, Rosenthal, Shawgo, Wells, Worley and W. W. Williams. A letter from Dr. L. H. Mettler, of Chicago, was read, accepting an invitation from the society to address it on a neurologic subject on May 14. A committee, consisting of the president and secretary, was appointed to make arrangements for Dr. McCormack's visit April 9.

Dr. R. J. Christie, Jr., reported a case of traumatic epilepsy in a boy of 6, upon whom he had operated with excellent result. At operation it was found that adhesions were present between the meninges and skull and also between the meninges and brain. An area of degeneration was apparent at the point where the meninges were in contact with the encephalon. Cargile membrane was interposed between the meninges and brain, as well as between the meninges and the skull. The convalescence was uneventful; the dressings were changed once at the end of twenty-four hours and primary union was secured. The patient, up to the time the report was made, had been free from seizures. Previous to operation there had been almost daily manifestations.

Dr. W. W. Williams reported an operation for gangrenous appendicitis in a pregnant woman of 26. The appendix was found adherent to the uterus and offered some difficulties of removal. Adjourned.

GEORGE E. ROSENTHAL, Secretary.

CHICAGO MEDICAL SOCIETY.

A regular meeting was held February 7, 1906, with the president, Dr. Charles S. Bacon, in the chair. Dr. William J. Butler read a paper entitled "A Consideration of the Febrile Temperatures Observed During the First Days of Life, with a Report of an Epidemic Infection of the Respiratory Tract in the Newborn."

FEBRILE TEMPERATURES DURING THE FIRST DAYS OF LIFE.

WILLIAM J. BUTLER, M.D.

(Abstract.)

Abnormalities in temperature during the first days of life are frequently overlooked, owing to the lack of systematic observation with the thermometer, which alone makes it possible in many cases to determine the presence of disease. The rectal temperature of the newborn averages 37.8° C. (100° F.); it drops one or two degrees during the first few hours, returning to 37.5° C. at the end of thirty-six hours. There is a second decline on the fourth day, followed by a rise, reaching its maximum on the eighth day. Abnormal elevation of temperature is frequent, reaching, in the experience of Eross, 43 per cent. That it was due to infection or toxemia was shown by the result of prophylactic measures, which reduced it to 11.38 per cent. The infection may come from the birth canal or be communicated after birth; it may enter through the navel, the respiratory or the gastrointestinal tract. The symptoms referable to the latter are usually most prominent, even when the original port of entry has been elsewhere.

The author reports four cases, constituting a small ward epidemic, with autopsy findings in the one fatal case. The temperature was elevated in all,

reaching 40.5° C. (105° F.) in two cases; the course of the fever was remittent, and lasted from ten to fifteen days or more. There was catarrh of the nose and pharynx, some cough, mild gastroenteritis, and in two eases a skin eruption, papulopustular in one case, petechial in the other. Restlessness, sometimes drowsiness was noted; occasional vomiting and irregular bowel movements occurred; the urine showed a brickdust deposit, and in one case anuria was present. This was the result of the high temperature rather than its cause. There was more or less discharge from the umbilicus, but the autopsy did not sustain a theory of infection through this channel. Catarrh of the bronchi was established by the autopsy and bacterial study indicated that this was due to the micrococcus catarrhalis and to the pnenmococcus. There was decided evidence of contagion, as the infants affected were those placed in the same cot with the first case, while others in the ward escaped.

Prophylaxis requires aseptic treatment of the cord, avoidance of infection from the mother or attendant and the isolation of the sick child. Treatment eon-sisted in sponging or bathing for the high temperature, diluting the breast milk with sterile water or limewater, enteroelysis, and small doses of calomel for the gastrointestinal disturbance, water by mouth and rectum with sodium bicarbonate in enema for the tendency to anuria, and, locally, swabbing of the nares with borie acid solution. Expectorants were avoided for fear of increasing gastric disturbance.

DISCUSSION.

Dr. Effa V. Davis:—The subject of infections in the newborn is interesting to me, although I have never been called upon to treat anything like an epidemic. It seems to me we have forgotten other routes of infection than the eyes of the newborn. The nose, mouth, ears and vagina are exposed to the bacteria of the mother's vagina, and I think every precaution should be taken in bathing the newborn. Oiling is not sufficient. In dealing with the cord in the newborn child it is good practice to bathe it with a solution of bichlorid of mercury, 1 to 2,000. This may seem a little strange, but it is a practice we have carried on for some years, and it is very rare that we have any infection of the navel. The cord is not tied at first, but elamped with forceps and cut five or six inches long. After the hands are washed and the navel itself washed with bichlorid of mercury the cord is then ligated with as much eare as should be taken in a surgical operation, cut short and enveloped in sterile absorbent cotton.

As to the care of the mouth, I will say that the mouth of the child is very much exposed to the vaginal discharges, and while I have not been in the habit of washing the child's mouth I still think that is one source of the child becoming infected. The last case which came to my notice at the hospital occurred some months ago. The ease was not attended by myself. The mother had a severe hemorrhage, so that her milk supply was not abundant. The child had elevation of temperature for the first few days; it slept in the same cot with other habies and they continued normal. The temperature of the child subsided after the mother's milk became abundant. No treatment except feeding was employed.

Dr. John C. Cook:—I believe it is conceded that very young children are liable to have any of the diseases to which older children are subject. We encounter in our study of the diseases of children some unusual temperatures in the newborn. These high temperatures begin, as a rule, on the second or third day after birth and continue for two or three days in many instances, and when the milk is established they subside without any treatment. In the few cases which I have encountered the high temperature appeared to have been due to a toxochemical condition rather than to a bacteriological; and by administering normal saline solution, getting the kidneys to act and cleaning out the alimentary canal the temperature would be materially reduced, these enemas being given at the normal temperature of the body. It is remarkable sometimes to note what a high temperature a child may have without our being able to find any pathologic condition, so far as location is concerned, even an infection of the air passages or of the intestinal canal or of the cord. I recall a case that I saw on the second

day after birth. The child was crying; it could not be quieted and its temperature was 107°. It was immersed in tepid water to reduce the temperature. The same day a wet nurse was procured, and on the second day thereafter the temperature became normal. There was undoubtedly a lack of fluid in the body that caused this elevation of temperature.

We also have the ordinary lung infections in young children. In most of these cases the high temperature is of bacterial origin. We not infrequently find the pneumococcus, the staphylococcus or the ordinary streptococcus. I think the author of the paper laid stress on the presence of systemic infection by the staphylococcus albus as being the cause of most of these high temperatures. I suppose we encounter in these cases an inflammatory action, as an infection of the gall ducts, the liver, etc. It is hardly probable that high temperature in these cases can be attributed to one cause. Undoubtedly there are a variety of conditions, some bacterial and others chemical, that produce or cause such unusual and high temperatures.

Dr. Emil Kies:—If we consider that a babe in the uterus contains no bacteria on its outside or inside, and that within a few days after it is born it contains all bacteria that chum with us through our lives, it is surprising that so few of them die. It does not take many hours after the birth of a babe before we can find the colon bacillus. It does not take many hours before we can find the staphylococcus on the skin, and we can find a variety of organisms in the mouth. Whatever is in the incuth of the babe is liable to gain entrance to the respiratory tract. In a great many cases the febrile diseases of the newborn are overlooked because the temperatures are not regularly taken. When we go through maternity hospitals we find, in the majority of the cases, that the temperatures of the mothers are taken most carefully and regularly, but there are very few hospitals I know of in which the temperatures of babies are taken in the same way. If they were taken the morbidity in the newborn would be fully as high as the morbidity in the mothers. In years gone by, practitioners would say they had attended three hundred confinements and had never seen a temperature. When you asked them whether they took the temperature or not they would say no, the woman was all right. The same holds good with regard to babies. They have told us that babies never had temperatures. When we take the babies' temperatures regularly we find that they vary a great deal.

Dr. Cook mentioned something that interested me. He spoke of drying upof the baby, so to speak, and its connection with high temperature. I saw a child, a few days old, which was kept in an incubator, as it was premature. It developed very pronounced jaundice and the temperature reached 108°. I was convinced that the baby was going to die. It was taken out of the incubator and recovered completely. There is such a thing as overheating in an incubator. If we take an adult human being and put him in a hot room and observe the temperature we will find it does not rise very much—perhaps half a degree. But in a newborn child temperature would be regulated automatically. That may have something to do with the drying up. The interesting part of the paper was the portion which showed how easily such things are overlooked. It would be interesting to know what was done to get rid of the infection in that particular baby cot, and whether the cot was infected afterward or not.

Dr. Butler (closing):—I was pleased to hear repeated in the discussion the point that disease in the newborn is frequently overlooked unless the child succumbs, when conjectural causes are often ascribed because of our failure to examine them closely and have routine temperatures taken. As to the rise in temperature in infants in incubators, the overheating of which is not properly guarded against, this is, I presume, an unavoidable result of the latter, the evil effects of which disappear when they are removed, provided the high temperature has not been too prolonged.

In answer to the question as to what was done with the cot in this instance, I would say that while it was disinfected I believe it was the close contact with infected cases that was the chief factor in spreading the contagion. Concerning the subsidence of an existing temperature following abundant nursing by the infant, it would seem that the same might be attributed to the establishment

of free elimination, especially by the kidneys, the function of which is so often suspended during this time, and probably to any antitoxic properties derived from the mother's milk.

Dr. A. P. Heineck read a paper entitled "The Gross Abnormalities of the Appendix Vermiformis, Noted in 3,550 Postmortem Examinations." (See page 339.)

DISCUSSION.

Dr. Byron Robinson: -First and foremost, I wish to congratulate Dr. Heineck on his excellent paper and to express my admiration for his persistent industry. This paper is one among the second attempts only to utilize the Cook County morgue for the detailed study of individual abdominal viscera. Among abdominal organs the appendix stands in the foreground of interest because appendicitis is the most dangerous and treacherous of abdominal diseases—dangerous because it kills and treacherous because its capricious course can not be prognosed. There are three important subjects in Dr. Heineck's paper which will bear study: one is the position of the appendix; the second is peri-appendicular peritoneal adhesions; a third is the reciprocal relation of disease of the appendix and oviduct.

1. The position of the appendix is important as regards its relation to mus-

cular trauma and also whether its perforation occurs in the colonic area, a benign area of peritonitis, an exudative non-dangerous area, or whether its perforation occurs in the enteronic area, an area of absorption, a dangerous area, a non-peritonitic area. The appendix may occupy many positions in the abdomen. It has an extensive, mobile range among abdominal viscera. The numerous deviations of the appendix from the right iliac fossa must not be considered as abnormalities. I shall assume in relation to the psoas five positions for the appendix and present them in the following table of appendicular position and peri-appendicular adhesions. The table is from the personal inspection of abdominal autopsies on six hundred adults:

(1) Pelvic position.—Woman 48 per cent., adhesions 27 per cent.; man, 37 per cent., adhesions 21 per cent. (2) Resting on psoas.-Woman 20 per cent., adhesions 85 per cent.; man 46 per cent., adhesions 83 per cent. (3) Retrocecal.-Woman 35 per cent., adhesions 47 per cent.; man 20 per cent., adhesions 43 per cent. (4) Potential position.—Woman 20 per cent., adhesions 50 per cent.; man 23 per cent., adhesions 62 per cent. (5) Resting to right of psoas,— Woman 28 per cent., adhesions 40 per cent.; man 18 per cent., adhesions 40

per cent.

What is an abnormal position of the appendix? Normally, the appendix may be placed in contact with any abdominal viscera. The appendix is in abnormal position when permanently fixed. When the appendix is fixed by peri-appendicular peritoneal adhesions it is fixed, dislocated, abnormal in position, e.g., there are 8 per cent. of non-descended ceca and appendices in man and 5 per cent. of non-descended ceca and appendices in woman. The cecum became fixed, generally, in the renal region during embryonal life, while on its journey to the right iliac fossa. The non-descent of the cecum and appendix is due to intrauterine peritonitis or destruction of part of the cecal and appendicular blood

supply by traction during axial rotation of the tractus intestinalis.

Peri-appendicular Peritoneal Adhesions. The second subject of Dr. Heinicke's paper is of great importance. It comprises the subject of periappendicular peritoneal adhesions. In 600 adult autopsies I found in males 60 per cent. of peri-appendicular peritoneal adhesions and in the females 48 per cent. Whence come these peri-appendicular peritoneal adhesions and what are their The peri-appendicular peritoneal adhesions originate mainly from trauma of the psoas muscle on some segment of the tractus intestinalis, as appendix, cecum, distal ilium. Trauma of the psoas muscle causes appendicitis by inducing pathologic bacteria or their products to migrate through the appendicular mucosa, the muscularis and the serosa, producing plastic peritoneal exudates or peri-appendicular peritoneal adhesions, which, by organization and progressive contraction, dislocate, fix and flex the appendix and mesoappendix, compromising the appendix and mesoappendix in structure of the mucosa, muscularis, serosa, vessels, nerves; in function, as peristalsis, absorption, secretion, sensation, eirculation and nourishment, and caliber, producing non-drainage, obstruction, calculus, stricture. The trauma of the psoas musele produces perivisceral plastic peritoneal exudates, adjacent to any segment of any visceral tract, according to its bacterial contents, which may lie within its range of traumatic action, viz.: (a) Segments of the tractus intestinalis, i.e., cecum, appendix, distal ilium, duodenum, liver and sigmoid; (b) tractus genitalis, i. e., oviduct; (c) tractus urinarius. i. e., ureter; (d) tractus lymphaticus, i. e., glands adjacent to ureter lying within psoas trauma; (e) tractus vascularis, i. e., veins and arteries. In 600 adult autopsies I found peri-appendicular peritoneal adhesions present in 60 per cent. of the males and in 47 per cent. of the females, with 80 per cent. of peri-sigmoiditis, mainly due to trauma of the psoas. By progressive contraction of peri-appendicular peritoneal adhesions the appendix is compromised in structure, function and caliber, producing flexion, non-drainage. These data accord with two manifestations, viz.: (a) That man is afflicted with more appendicitis than woman; (b) that the main appendicular disease occurs within the trauma of the psoas muscle. The conclusion is inevitable that trauma of the

psoas musele is a vital factor in the etiology of appendicitis.

3. The Reciprocal Relation of Diseases of the Appendix, Oviduet and Ovary. This is a third important matter in regard to the appendix. The recent advocation of intimate reciprocal relations of the appendix and genitals by general surgeons, that appendicitis produces salpingitis and ovaritis or that salpingitis produces appendicitis. I wish to oppose from knowledge gained in practice and observations in autopsies. Diseases of the oviduct, ovary and appendix are separate and distinct as to etiology, except in secondary or rare instances. The anatomic relations of the appendix, ovary and oviduct are intimate in the majority of women, as the appendix projects in the pelvis in 48 per cent. of subjects. This, however, does not alter the etiology of disease in either appendix or genitals, which is inflammatory, bacterial and practically begins in the mucosa of each organ. etiology of inflammatory processes in both organs occurs from within and is intravisceral and endovisceral, and therefore any pathologic relation between the two organs must be accidental and secondary. The connecting link, anatomically, physiologically, pathologically, between diseases of the oviduct, ovary and appendix is the peritonenm, which may compromise structure and function, through peritoneal exudate, of either set of organs. Heretofore insufficient attention in the ctiology of visceral diseases has been devoted to progressive contracting perivisceral peritoneal adhesions. In general disease of the appendix it does not affect any other organ except the peritoneum, by exudates. Through the personal autopsic inspection of the abdominal viscera in some 200 females, 50 children and 475 males. I am convinced that not 2 per cent. of the female subjects presented evidence that the appendix was the primary cause of oviductal and ovarian discase. It may be secondary and indirect and is infrequent in autopsies. Probability is the rule of life, and since, hy inspection in 200 female autopsies, I could not find evidence that 2 per cent, of infection of the oviduet or ovary was primary from the appendix, it is evident that infection of the tractus genitalis from the appendix is rare. The peri-appendicular peritoneal adhesions are evidently from its own intra-appendicular, endo-visceral mucosa. They confine themselves to the immediately adjacent appendicular region. The reverse proposition that the tractus genitalis directly produces appendicitis is almost equally negative. directly or secondarily, the peri-oviductal peritoneal adhesions tell the story. Hence since 48 per cent. of female appendices, my own percentage from 155 females, project into the lesser pelvis, the appendix is liable to become surrounded by peritoneal adhesions in 27 per cent. of eases, and consequently appendicitis is indirectly secondarily produced by the progressive contraction of the periappendicular peritoneal adhesions, arising from the oviduet, causing compromisation of the appendix by flexions, non-drainage, disturbance of circulation and nourishment. I desire in this connection to direct special attention to the perivisceral peritoneal adhesions and in particular to peri-appendicular peritoneal adhesions, with the end results of flexion, non-drainage, appendicitis.

Peri-visceral peritoneal exudates occurs in 72 per cent. of subjects within

range of traumatic action of the psoas on the right side (appendix, eecum, distal ileum, duodenum, liver), and 80 per cent. of subjects on the left side (sigmoid). In adults 70 per cent, of peri-visceral peritoneal adhesions in the tractus intestinalis, located bilaterally to the genitals, pursue their progressive contractions daily, weekly, monthly, yearly. Is structural and functional damage expected from these persistent contracting peri-visceral peritoncal adhesions? The reader may answer. The reasoning of general surgeons unfamiliar with structure, function and diseases of the genital tract based on a few obscure cases of appendicitis or salpingitis tends to mislead the profession as to the reciprocal pathologic relations of the appendix and oviduct. Primarily, appendicular and oviductal diseases are separate, independent—each arising from its own nucosa. The probability is that if a woman suffers pain in the pelvic region it is of genital origin. Besides the congestions with consequent vigorous uterine peristalsis and pain of menstruation is definite proof of the assertion. Congestions (menstruation) in the pelvic region enhance disturbances and pain in the 70 per cent. of bilateral adult peri-visceral peritoneal adhesions in the tractus intestinalis-closely adjacent to the genitals. Forty-seven per cent. of women and 60 per cent. of men possess peri-appendicular peritoneal adhesions, but it is not perforative appendicitis-the most treacherous and dangerous abdominal disease. The data here furnished from autopsy decides that every time an abdomen is opened and the appendix is found surrounded by peri-appendicular peritoneal adhesions the patient is not always afflicted with perforative appendicitis. The irrational association of intimate reciprocal pathologic relations of appendix and genitals stimulates surgical license. Autopsies demonstrate that primarily (i. e., bacteriologically) the reciprocal pathologic relations of genitals and appendix is practically negative. Secondary reciprocal pathologic relations of appendix and genitals is mainly due to persistent progressive contracting peri-visceral peritoneal adhesions, e. g., peri-appendicular peritoneal adhesions, produced by the adjacent oviduet, may lead to appendicitis and compromising its anatomy, physiology and drainage.

Dr. Victor J. Baccus:—In connection with this most important paper of Dr. Heineck I have a specimen which is worthy of being reported. The specimen is from a case of double dermoid, in which, at the time of the operation, we accidentally discovered the abdominal end of the appendix adherent to the small right dermoid. It was so rare that I wrote to Dr. Kelly with a view to having it mentioned in his book on appendicitis, but it was too late. He wrote me, however, that he had never seen such a specimen.

Regarding the points discussed by Dr. Heineck and Dr. Robiuson, we have met with two interesting cases of pathologic conditions created by old adhesions of the appendix. The first case, a preguant woman, developed appendicitis the first time she had a utcrine contraction, when labor had about begun. The case was characterized by interine pain of a normal character, but in addition there was a severe pain in the region of the appendix. This pain was of an unusual character and more severe than that from normal uterine contractions; though at the time labor was taking place, it was difficult to say whether it was a uterine pain, characteristic of labor, or pain due to a beginning peritouitis. The same evening the temperature was 100°: the pain persisted in the region of the right side, about McBurney's point. We considered the question of causation of this temperature. The woman had been delivered with gloves, with the assistance of nurses; every possible aseptic precaution had been taken. The chances of infection were, therefore, very slight. Pain persisted and finally she vomited. Tenderness increased and there was distention of the abdomen, with elevation of temperature. The next morning we made a diagnosis of peritonitis, secondary to an old chronic right-sided salpingitis or appendicitis. Operation was advised but refused, and the patient died on the fourth day of general peritonitis. diagnosis was verified at the postmortem examination, which was conducted in the presence of the internes and nurses. We found that the appendix had ruptured into two distinct parts, the distal end of the appendix being adherent to the right horn of the uterus and its costal end adherent to the cocum.

The next case occurred in a woman, 35 years of age, who developed late intestinal obstruction. Operation revealed the fact that the appendix was adherent to the tube and ovary, with a loop of the intestine constricted and passing under it. At the operation the removal of the appendix had the effect of relieving the obstruction and the woman recovered.

Dr. William Fuller: - Of the three conditions or headings, namely, position, size and relation, under which Dr. Heineck's paper deals with the abnormalities or anomalies of the vermiform appendix, I would be very much inclined to give preference in the discussion to that of abnormal position. I would do this because of the vital interest it has for the clinician and surgeon. The interest which attaches to inflammatory conditions in the appendix abnormally placed in the abdomen should impress every surgeon who has dealt with such conditions, and entitles it to the chief place of consideration in this subject. It is known that the vermiform appendix may be found in any place within the abdominal cavity, but the explanation for this is forthcoming if we briefly consider for a moment the factors which act in the production of this anomaly. The main cause, and probably the one which is of more importance than all others combined, is that of arrested fetal development in the ileo-cecal structure, which results in non-descent of the cecum and frequently fixing it at some point much higher than is normal. We are told by embryologists that the process of intestinal rotation which is known to occur in the embryo is sometimes interrupted, and is followed not only by a misplaced cecum and appendix, but an entire absence of the ascending colon. The frequency with which the appendix is abnormally placed is greater than is thought by the average physician, and Dr. Byron Robinson has shown that developmental error alone accounts for about 10 per cent. of the cases, and that it is found a little more than twice as often in the male as in the female. Mention might be made of other causes, such as long mesenteries, adhesions and the growth and development of abdominal and pelvic tumors. The lessons to be learned from the surgery of inflammatory lesions of abnormally placed appendices are valuable and lasting, and the brief account of a single case seems not out of place here.

The patient was a man of 30 years, whose case was recent, presenting every earmark of acute appendicitis, with the exception of the location of the tenderness and rigidity which was in the left upper abdomen, almost over the spleen. Dr. Korssell made a correct diagnosis, with which I could not agree till the operation revealed the cecum to the left of the median line and the appendix attached to the abdominal wall close to the spleen. Such cases as this one are useful and of great importance clinically, enabling the physician to more often and with greater certainty reach a correct differential diagnosis in conditions presenting unusual features.

It seems somewhat strange that in as many cases as Dr. Heineck reports that not a single absence of the appendix was noted. He states that there was not a single absence not attributable to operation or sloughing, which leads us to infer that the congenital absence is a condition almost never seen. Of course, if there has been an operation the absence of the appendix is easily explained; but if there has been no operation it hardly seems just to conclude that the absence of the appendix in every instance is due to sloughing or to other pathologic condition; while it is, no doubt, due to this condition in the large majority of cases, it must be remembered that it may possibly be absent owing to some developmental or congenital defect. Such cases have been reported by Byron Robinson, Zukerkandl, Bryant and others. The following case, in all probablity, belongs to this category:

A man 28 years old (Dr. C. Cupler's patient), with history of several attacks of appendicitis, was operated last June. Nothing abnormal was noted in the ileocecal region except a few adhesions, which were easily disposed of; the cecum and its junction with the ileum, the ascending colon, transverse colon and descending colon were all carefully identified in order to save time and avoid groping in the dark for the appendix. The anterior longitudinal muscular band, as well as the posterior one, was demonstrated by dissecting the eecum and ascending colon from

the posterior abdominal wall almost up to the hepatic flexure and bringing these structures into the incision. Every peritoneal fossa and recess about the ileocecal junction was laid carefully open; every portion of the cecum was rolled carefully between the thumb and fingers, and at two or three places where the cecal wall seemed thicker than normal the peritoneal covering was divided and reflected with the hope, possibly, of finding the organ within the bowel wall, but no structure resembling the appendix was discovered. The condition as found in this case would not justify the assumption that the absence of the appendix, if such it was, could have been due to causes other than congenital. Over one hour was consumed in careful search for the appendix, and in view of the fact that all of the structures above named were perfectly normal in development and in relation to each other it seems right to regard this case as one of congenital absence of the vermiform appendix. The point, however, or rather conclusion, emphasized in Dr. Heineck's paper, that the absence of the appendix is so infrequent to be of practically no clinical importance, is correct.

Dr. James B. Herrick read a paper entitled "Acute Dilatation of the Stomach, with the Report of a Case Complicating Pneumonia and Ending in Recovery."

DISCUSSION.

Dr. C. C. Rogers:—I would like to ask if these cases that had acute dilatation of the stomach had been given large doses of morphin to allay pain previous to the operation or previous to their entering the hospital. In cases of operation upon the gall-bladder for gallstones I have found that, previous to entering the hospital, the patients had been given large doses of morphin to allay pain. The result is that we get, nearly always, lack of peristalsis of the intestines and an acute dilatation of the stomach following operation.

The second case reported by Dr. Herrick is similar to one I recently had in Frances Willard Hospital. The patient, a woman, had pain for thirty-six hours constantly. She had been given large doses of morphin; she came into the hospital with a temperature of 96°, per rectum, with a pulse, instead of being high, of 45. She was operated upon immediately on entering the hospital, chloroform being the anesthetic used. I removed from the gall-bladder 124 gallstones. She stood the operation fairly well, but twelve hours afterward began to vomit a dark vomitus, such as Dr. Herrick has stated. This came up with very slight exertion on her part. The stomach was washed out repeatedly and large quantities of this dark vomitus were removed from the stomach. It was impossible for her to get a bowel movement, and by giving subcutaneous salt solution in large quantities she was kept alive for eighty-two hours.

Dr. Byron Robinson:—This paper has interested me considerably. I began to study the subject of gastroduodenal dilatation, not gastric dilatation, in 1893, and in 1894 I performed my first operation for gastroduodenal dilatation on a woman by means of gastroenterostomy. Twelve years later her physician, Dr. Henry, of Fostoria, Ohio, informed me that she was living and well. She had vomited for some twenty-one months, but did not lose flesh to any great extent. On opening the abdomen by a median incision I found an enormously dilated stomach and by examination of the pylorus found no stricture nor malignant condition, but a widely dilated pyloric ring and an extensively dilated duodenum. I perceived I had made an erroneous diagnosis, but considered gastroenterostomy justifiable in her condition. The operation produced ample gastric drainage and the patient began to recover immediately after the operation. For seven years she wrote me letters regarding her personal health and comfort. In 1895 I performed a postmortem for Drs. Holman and Webster on a woman who had vomited for nearly two years. Dr. Webster thought the death due to pyloric obstruction, but examination at the autopsy demonstrated gastroduodenal dilatation with dilated pyloric rings. During the past dozen years, in the personal autopsic abdominal inspection of some seven hundred subjects. I have observed fully fifty marked cases with gastroduodenal dilatation due to the compression of the superior mesenteric artery, veins and nerves on the transverse duodenum. The most marked case in the living I have witnessed was a patient to whom Dr. Coons, of

Chicago, called me in 1898. A man about 45 had been in bed perhaps five months with hip-joint disease. He had considerable lordosis. The abdomen was enormously distended and he vomited continually. I thought of some form of obstruction in the tractus intestinalis and proposed that abdominal section offered the only faint hope of relief. The patient quickly and cheerfully gave his consent. I made an incision in the middle line and found the abdomen absolutely filled from pelvis to thoracic diaphragm with a white, shiny, distended cyst, which proved to be the cause of the enormously dilated stomach. If the subject had been a woman the cyst, would have been immediately taken for an ovarian cyst. Extensive operation on the patient in his weak condition was contraindicated, and finding no intestinal obstruction I closed the abdominal incision. The patient subsequently died and autopsy was allowed. We found that the enormous dilatation of the stomach and duodenum was caused by constriction of the superior mesenteric artery, vein and nerve on the transverse segment of the duodenum. The subject had a considerable degree of splanchnoptosis and lordosis; several months lying on his back in bed made the progress of the gastroduodenal dilatation rapid in its course. There is no doubt in my mind that the cause of the gastroduodenal dilatation is the compression of the superior mesenteric vessels on the duodenum. The generally correct diagnosis is gastroduodenal dilatation, not gastric dilatation. I have noted this matter in autopsies for over a dozen years. Albrecht's views were published in 1898, five years after I had taught and discussed it over and over again and relieved the condition by gastroenterostomy. The causes of acute gastroduodenal dilatation are generally exacerbation of old dilatations or causes of splanchnoptosis. Dr. Herrick announced in one of his cases that there was diastasis of the recti abdominales. That is absolute splanchnoptosis. We can not have a diastasis of the recti abdominales without, sooner or later, gastroduodenal dilatation. I have seen dozens of these cases in the living and dead. I am absolutely opposed to the idea that there is anything idiopathic about this condition. I do not hesitate to say if physicians who announced idiopathic gastric dilatation will perform fifty autopsies the mysteries will clear and the so-called acute stomach dilatation following abdominal section will become the simple gastroduodenal dilatation, due to compression of the transverse duodenum by the superior mesenteric artery, vein and nerve, which I have advocated for a dozen years. I was a little surprised that Dr. Herrick did not mention the views that I reported in 1899 in the American Medical News, in 1900 in the Cincinnati Lancet and in three consecutive articles published in the Philadelphia Medical Journal on this subject, large enough for any one to see, as that journal had 16,000 circulation.

Dr. George W. Hall:—I saw a case in which Dr. Sippy was associated with me. The case was diagnosed as one of acute dilatation, with the lower border of the stomach almost reaching the suprapubic region, accompanied with marked vomiting and with all the symptoms of acute dilatation, and while Dr. Herrick spoke of intoxication in these cases I do not recall that he referred to the occurrence of tetany. In this case tetany occurred; hyperexcitability of the facial nerve, Chrostek's sign, was present, and firm pressure over the nerves of the arm produced Trousseau's sign. Acute nephritis developed. It was thought early in the case that perhaps it was one of pregnancy with vomiting. Upon examination the uterus was found to be smaller than normal. Vomiting persisted for several days; the patient showed extreme emaciation, with slight temperature, with a comparatively slow but almost perfect recovery taking place. The symptoms of tetany were decidely present, but in a moderate degree.

Dr. Herrick (closing):—In answer to the question asked by Drs. Rogers and Salisbury, I will say that no morphin had been given in the two cases I have just reported.

Dr. Robinson has raised the question as to the previous existence of gastroptosis in cases of acute dilatation. This is an important point and one that should receive more careful clinical observation, for, as Dr. Robinson says, an acute dilatation might be brought about by an aggravation of a previously existing gastroptosis, with resulting pull on the superior mesenteric vessels. In my

two cases, however, there is some evidence against the previous existence of gastroptosis. In the one case, while no special attention was directed to the stomach before the onset of the acute dilatation, it was noted, at the first examination, that the stomach apparently lay above the umbilicus, and in the other case I have the word of the surgeon that at the operation the stomach was inspected and found to be of normal size and normally located. I can hardly agree with the statement of Dr. Robinson that the existence of diastasis of the abdominal recti is a proof that splanehnoptosis must have existed. His statement regarding this seems to me to be too sweeping.

Dr. Robinson eharges me with having omitted reference to his work along this line. I have made no attempt to review this subject exhaustively, as I stated at the beginning. Quite complete bibliographies are contained in the articles I mentioned by Thomson and by Neek. Dr. Robinson will probably find reference there to what he has done on acute dilatation. I must certainly disclaim

any intention of purposely slighting any of Dr. Robinson's work.

In response to my request, Dr. Robinson kindly sent me the articles to which he referred in the discussion—the one in the Cincinnati Lancet-Clinic, Dec. 8, 1900, the other in the Philadelphia Medical Journal, Nov. 30, 1901. In these articles Dr. Robinson distinctly ealls attention to the influence of pressure of the superior mesenteric artery, vein and nerve on the transverse segment of the duodenum in the production of gastroduodenal dilatation, and says that he first observed this in 1893, and had since seen many instances of it. I think I may be pardoned for giving Albrecht the credit for calling attention to the influence of the mesenteric vessels in causing dilatation, as his article was published in 1899, or before Dr. Robinson wrote. Dr. Robinson in his own paper refers to the work of Albrecht. The question is, therefore, one of priority, and the prior publication is Albrecht's, though Dr. Robinson's observations antedate the publication of Albrecht.

But in Robinson's articles, unless I misread them, there is no reference whatever to acute dilatation of the stomach, which is the subject under discussion; all the eases he describes are eases of chronic obstruction. This will, I trust, explain why I did not run across references to the work of Dr. Robinson and why I spoke of Albrecht as the one who first called attention to these possible ctiologic factors.

T

Dr. C. E. Bentley read a paper, by invitation, entitled "Contact Points of Dental and Medical Professions."

SOME POINTS OF CONTACT OF THE MEDICAL AND DENTAL PROFESSIONS.

CHARLES E. BENTLEY, D.D.S. CHICAGO.

There is an ancient fable that the gods in the beginning divided man into men, that he might be more helpful to himself, just as the hand is divided into fingers, the better to realize its purposes. "This old fable," says Emerson, "covers a doctrine ever new and sublime, that there is one man present to all particular men only partially or through one faculty, and that one must take the whole society to find the whole man." Man is not a farmer, nor a professor, nor an engineer, but he is all. Man is priest, and scholar, and statesman, and producer, and soldier. In the divided or social state these functions are parceled out to individuals, each of whom aims to do his stint of the joint work while each other performs his. The fable implies that the individual must sometimes return from his own labor to embrace all the other laborers.

In other words, great Nature, far back in the lapse of time, pointed out the value of specialism. The labors of society are so vast and important that they must be pareeled out to specially trained workers, so that, by concentration of effort at each point, progress may be made toward a perfected social structure. So Nature teaches, and at no period of conscious existence have the sons of Nature so thoroughly put this particular lesson into practice as in the later nineteenth and twentieth century days. All the arts and sciences are divided

into specialties. In the commercial world, in the world of education, in professional life, the highest results are obtained by special workers, detailed to special

work, the combination of individual results making a perfect entity.

In no center of activity does the spirit of specialism obtain greater than in the field of medicine. The men who to day are making the greatest impress upon their profession and who are contributing most of value to its literature are those who have caught this great lesson of life and are using their short span of days to perfect their knowledge of and usefulness for one special thing. This does not imply that individual knowledge is growing more restricted or that specialism indicates limitation. Remember that in our wise fable the individual must sometimes return from his own labor to embrace all other labors. No specialist who has not a good working knowledge of the entire field and breadth of training can make for clearer vision and insight along the narrower chosen line.

In compliance with this world spirit the whole human body is now divided among special students. Thus has oral surgery as a specialty sprung into existence. Not that the surgery of the mouth has not been contemporaneous with general surgery since it began, but that those whose special line of work confines them to the mouth have so developed the surgery of this region that its needs and the accumulated experience of those who are its devotees have made a distinct place for it in the realm of surgery, just as gynecology or surgery of the

eye or nose is now distinct from general surgery.

But specialists in any given field, from the very nature of things, necessarily cross and recross each other, thus making points of contact of greater or less importance. A prominent example of this inter-relation of activities is shown in the surgery of the mouth, for, although oral surgery has become a separate branch from general surgery, the points where the oral and the general surgeon have a common interest are very many. Some of these points of contact I shall endeavor to indicate this evening.

In the development of this specialty two causes have contributed much to its present-day status: First, the demands made upon the dentist by those who seek his services have stimulated him to include this class of work in his special field of labor; second, the recognition by the medical profession of the work done by the dentist, and, in some instances, the establishment of a chair of oral surgery in medical schools, such chairs being filled by dentists. This latter cause has been a stimulus to a broader and a deeper knowledge on the part of dentists in this particular department of surgery, and as a result fresh contributions to the literature, comprehensive textbooks and a wealth of information have come from dentists working in this line. Several have raised their names from the common level and have made a reputation of national importance. Garretson, Brophy, Gilmer, Fillebrown and Cryer are a few of the men who have won distinction in this line by reason of their creations. The surgery that is being done in the mouth to-day is along the line of principles laid down by these men.

The instrumentation involved in such surgery has been completely revised by reason of this new stimulus. The bungling operations that characterized the work but a few years ago have given way to those easier of execution and surer of results. One of the inexorable laws that is responsible for the advancement of this specialty is that all operations upon the jaws, save the operations upon the tongue, are to be performed within the mouth. This is practiced for two reasons: First, there is relatively little danger of sepsis in wounds of the mouth, because the fluids that bathe the oral eavity are capable of taking care of the specific germs which produce that condition; second, the unsightly scars that are produced by opening into the mouth from without are unnecessary, as ample room is provided within the mouth for the operations and the scar is averted. The importance of any method that avoids sears and conserves the esthetics can readily be seen. To the writer's mind these two things have done more for the advancement of oral surgery than any similar number of considerations that may be mentioned.

The question might be asked: What are the exact contact points of the medical and dental professions? What subjects should be included in such a chair? The

answer might be:

First-Associative lesions of first dentition. What physician is there present who has not been baffled by some of the many lesions that are incident to the dentition of the little folks? This heading should include, with the time of eruption of the temporary set, a study of localized stomatitis, irritative fever, diarrhea, spasms and, possibly, eruptions of the skin. When one considers the delicate and susceptible organism of the infant he is well prepared to understand that in the influence of the process of dentition must necessarily exist a powerful predisposing cause inviting the attack and, indeed, opening the portals, as it were, to enemies that otherwise might pass harmlessly by. The process of dentition, while a physiologic one, is yet like that of uterogestation, one of continuous physiologic stimulation, which may have but a shadowy line to the pathologic. Irritation, then, is a matter of consideration in all these associative lesions. If we can control this irritation we can abort the results. It is not, however, to be assumed that all infantile diseases are influenced by or, indeed, even remotely associated with dentition. Mistakes of this nature are quite frequently made, but we desire to emphasize the point that it should always have its full share of consideration in the diagnosis. To understand dental irritation one must be familiar with dental evolution. This, of course, means its physiology. We know the varying periods of eruption and we are at once led very directly in our researches. We should be familiar with the diseases that accelerate or retard this process. These, together with the subjective symptoms, should intelligently guide us in the treatment. Under this heading may be mentioned congenital hypertrophy of the tongue in children, tongue tie, bifid tongue and bifid uvula.

Second—Anomalies of second dentition and the surgical relations, especial attention being paid to those degenerative processes that have remote manifestations, such as pulp nodules, etc., which give rise to persistent neuralgic pains of the fifth nerve and its branches. There are many anomalies that might be classed under this heading, but three will suffice for this purpose: 1. Tooth germs, developing in positions where their product must remain encysted. 2. Teeth whose roots perforate the antrum. 3. Impacted wisdom teeth. These encysted teeth are often the source of much trouble, and not infrequently result in oseous tumors that demand surgical interference. The buccal roots of the first and second superior molars often penetrate the antrum, and if the pulp, or, as it is eommonly called, the nerve, becomes devitalized in such teeth it affords a channel for direct infection. This condition has only to be referred to in this presence to

understand its gravity.

Third—Alveolar abseesses and their sequelæ, a study of the causes and consequences of burrowing pus from such, together with the conservation of such teeth, for it is no longer held that a tooth should be consigned to the forceps becaused it is abseessed. The study of an alveolar abseess becomes interesting to the physician when its consequences involve remote tissue. The formation and confinement of pus in a cavity so obstinately inclosed as the alveolus of a tooth must necessarily inflict the severest suffering. The burrowing of this pus, following the direction of the least resistance, often finds its exit in peculiarly remote places; thus the points just below the malar process, beneath the chin, the anterior nares and as low down as the clavicle and mammæ are not infrequent exits for the pus. On account of these remote points of exit the source is often clouded in obscurity, and a reference to alveolar abseesses and their sequelæ is important to the physician.

Fourth—Fractures of the inferior and superior maxillæ. A study of the various splints and newer methods of reduction and the possibilities of restoration, cases where a large amount of tissue is lost, as in gunshot wounds. The great advance in the method of reduction of fractures of these parts is worthy of the physician's study, particularly as regards multiple fractures of the superior maxilla. The introduction of the skull cap for the support of splints for fractures of the bones of the face and mouth marks a great advance in the treatment of this class of fractures.

Fifth—The various forms of necrosis of the maxillæ, such as dental necrosis, alveolar necrosis, necrosis from lack of room for wisdom teeth, syphilitic necrosis,

mercurial necrosis, exanthematous necrosis, phosphorus necrosis and necrosis from injuries are of interest to physicians and dentists alike. Syphilitic, mercurial and exanthematous necrosis is more generally seen by the physician, although the oral surgeon is occasionally consulted. The systematic treatment lies wholly within the domain of the physician, while the surgical procedure may be done by either oral or general surgeon.

Phosphorus necrosis is rapidly disappearing, for two reasons: 1, all workmen are now required to have carious teeth filled before employment will be given in match factories; 2, amorphous phosphorus is now used in the making

of matches, which reduces the chance of such poisoning to the minimum.

Sixth—Ankylosis of the maxillary articulation. This heading should include a study of acute synovitis and arthritis. A simple synovitis may become a panarthritis, ending in a permanent ankylosis, necessitating excision of the neck of the condyle, which has only to be referred to here to indicate where the lines of the two professions co-mingle.

Seventh—Possibly the points of contact of the two professions are oftenest touched in the treatment of diseases of the maxillary sinus, for the reason, doubtless, that the teeth are often the cause of lesions in this cavity. Abscesses of the antrum, empyema of the antrum, mucus engorgement of the antrum, polyps, cysts and morbid growths of the antrum often engage the attention of both

physician and dentist.

Eighth—Trigeminal neuralgia. This prolific heading is interesting in the study of the many causes that may produce this condition. Dental exostosis, impacted teeth, syphilis, carious teeth, menstrual irregularities, pulp nodules, diseases of the Gasserian ganglion or its branches, together with their surgical treatment, are of interest to the physician, and manifestations of these the dentist often sees.

Ninth—Dislocation of the inferior maxilla, its causes and treatment, is another point of contact for which a patient is apt to seek relief from a physician or dentist.

Tenth—Congenital fissures of the lips and hard palate have received a greater contribution with regard to the technique of modern operations from the dental than the medical profession. I would fain avoid making any invidious comparison, but am desirous of "rendering unto Cæsar those things which are Cæsar's." A certain member of the dental profession has done more than 1,100 staphylorrhaphies, and is largely responsible for the technique that is much employed by surgeons the world over in this operation.

Eleventh—The care of the mouths of women during pregnancy, a knowledge that should form a part of every physician's equipment, so often neglected. Chemical analysis of the oral fluids of women during this period, together with prophylactic treatment of the mouth, is a necessity that every physician should recognize. The preservation of the teeth during this period is made possible by a recognition of certain modern methods that are in vogue to-day, and phy-

sicians should be taught them in the medical schools.

Twelfth—Ranula. A study of the delicate operation for the relief of an impacted body within the salivary ducts.

Thirteenth—Oral manifestations of syphilis. A study of mucous patches and the so-called Hutchinson's test teeth, differentiating them from the honey-comb teeth.

Fourteenth—A complete study of the benign and malignant growths that are found in the mouth, with their operation.

Fifteenth — The constitutional effect upon persons suffering from pyorrhea alveolaris, whose gums are constantly bathed in pus, which finds its way into the alimentary tract. The importance of a healthy mouth and its bearing upon a healthy body cannot be too strongly emphasized. Carious teeth become the habitat of myriads of germs hidden away in sequestered sewers, where they multiply with comparatively little interference. Almost any species of microorganism can be found in the mouth; in fact, it is the focal point of initial infection. Add to this carious teeth and a filthy environment and it is not difficult

to see the importance of guarding this portal of infection with such care as modern dentistry and preventive medicine demand.

These are some of the most important points of contact of the two professions. Are not these points of contact of sufficient importance to draw the two professions in closer relationship to the end that their efficiency may be increased and their service to humanity greatly augmented?

DISCUSSION.

Dr. Thomas L. Gilmer:—I think you will agree with me that the paper presented by the essayist is a most excellent presentation of the subject, and that it has been well given. When I received a program of this meeting I thought an error had been made in placing upon it only oral specialists to speak on this subject. So it seems to me yet, and owing to this fact and the lateness of the hour I will only touch on a few points which the author of the paper simply hinted at and then waive my prerogative in favor of some of the general practitioners who, I hope, will discuss this most interesting subject.

The dentist, well-informed in general and special pathology, as eareful as he should be in his examinations of the oral eavity, will not only examine the teeth to discover if there are eavities which need filling, but he will make a careful examination of the whole bueeal cavity, since that is his field, and he is largely responsible to his patients for that field. By making this careful examination he will often discover innocent conditions of which the patient is not eognizant, and which, if allowed to progress or eontinue, would become For instance, leukoplakia bueealis is a condition which is generally considered to be the forerunner of eareinoma. If taken in time and subjected to treatment of the x-ray, a more serious condition, which is most certain to follow, may be prevented. Again, slight abrasions of the buceal mucous membrane may often be found, caused by the attenuated edges of a sharp tooth which at first are innocent and may not be observed for weeks or months by the patient, and perhaps not observed until it is too late, or until there is a carcinomatous condition, which exposes the patient's life to great danger. mouth is often a good index of the manifestation of disease in remote parts. There are oral manifestations which indicate renal disturbances. For instance, in pregnant woman we may occasionally find in her mouth in some eases a swollen and tumefied condition of the gingivæ margins of the gums which bleeds at the slightest touch. In such cases if the patient's urine is examined albumin will frequently be found. There is another condition which occurs in diabetic patients which is almost pathognomonic of diabetes. For instance, we find an atrophied condition of the gingivæ, forming pockets in the interproximal spaces. These poekets are filled with débris, which is of a pasty grayish color, resembling the material found in syphilitie ulcers in the mouth. Accompanying this is a peculiar significant odor. These are only a few of the conditions in the mouth which are oral manifestations of diseases in remote parts.

Dr. Truman W. Brophy:-With the advent of a knowledge of baeteria the whole field of dentistry, oral surgery and oral hygiene has been forced upon the attention of the medical profession. It brought to the attention of men and women engaged in the treatment of human ills the greater importance of a knowledge and a means of treatment of abnormal conditions of the oral eavity. It brought to them a desire to do more in the way of preventive medicine, so far as it was possible to do so, in the prevention and arrest of the ferments which take place in the oral eavity and which become a means of sepsis to the entire organism. It is not my desire to say anything bearing upon what has been stated in the paper, and so well stated by Dr. Bentley, nor to review what has been said by my colleague, Dr. Gilmer, but I wish to say a few words regarding the importance of considering and practicing and putting into use in the various families that are treated by the members of the medical profession here represented the teaching of hygiene of the oral cavity. The mouth is the greatest of all eenters of infection. It is the passageway of septie materials into the alimentary tract, and from this tract the entire system becomes oftentimes impregnated with the poisons. Oral hygiene is the highest expression of general prophylaxis. If we take into consideration the condition of the ordinary mouth as it is found, we find there a quantity of septic material, as a rule, because the teeth, more than any other organs of the body, are subject to disease. The teeth break down and nature does nothing to restore them to health, which is quite contrary to her efforts in regard to other parts. They cannot be brought back to usefulness except by the skill of the dentist. They break down; this broken-down material is often passed into the stomach; frequently abscesses with great quantities of pus form about the roots of the teeth, which may become a source of direct sepsis by means of direct absorption, or may float into the oral cavity, pass through the alimentary tract, and thus convey poisons throughout the entire system. If I were able to do anything to improve the general condition of the human family I could not do more than to place the mouths of the people in a healthy condition and teach them to keep them that way. That difficulty lics in a lack of knowledge on the part of parents who fail to teach their children that it is essential to clean their mouths. They will wash their faces, they will give them baths, but they will permit their mouths to go unclean. This condition is largely observed among the more common people as we see them, so that we cannot do too much in advocating oral hygiene, because it is the most important part of hygiene. Furthermore, the absence of it promotes dental destruction, and dental destruction persists until the teeth are lost, and then, when lost, they can never be reproduced, nor is it possible for the skill of the dentist to construct artificial

teeth that can even approach them.

As to the question of pain, the dentist is constantly in touch with pain. The physician oftentimes overlooks the source or sources of pain as manifested in and about the mouth. In the field of work in which I am engaged in the capacity of an oral surgeon, and in the capacity of a dentist, I am able to see, as has been pointed out by the author of the paper and the first speaker, that there is a field which formerly was not cultivated. I find that for want of a knowledge of dental pathology and of the various changes which take place in and about the mouth the physician, in the management of his neuralgic patients, often overlooks important factors in the establishment of these neuralgias, or in the bringing of them about. His patient is treated in accordance with what the text books prescribe, and what the professors teach, without a knowledge of the true cause of the disturbance. The dentist, formerly, for want of knowledge of general pathology, groped in the dark and committed the same error in attempting to treat a local condition which might have had its origin from some general disturbance. The most important steps taken in the way of education in the medical schools of our country, and now being carried on to a considerable extent in the eities abroad, have been to have some one qualified to teach medical students some of the special branches of pathology that they do not usually get in the regular course of medical instruction. If recent graduates from a medical college were asked to make a differential diagnosis between sensitive dentine, pulpitis, pericementitis, and incipient dental alveolar abseess, ninety-five in a hundred would not be able to answer these questions, simply because they have not had the training. It is not the fault of the young men. The faculty of the institution does not give them the opportunity to learn those essential features of pathology which have so much to do with bringing about abnormal conditions, particularly of the fifth pair of nerves, so they are not able to trace the disease to its origin. Consequently they administer the usual remedies, narcotics, etc., to control pain, which they do temporarily, after which the pain recurs. For instance in hypertrophy of the third division of the fifth nerve, so commonly found at the mental foramen, due to some dental irritation, perhaps to a bad fitting plate, how frequently do practitioners fail to treat the neuralgia because they do not recognize the true seat of the primary lesion. They fail because they have not considered this feature of disease; it has not been pointed out to them, and they do not succeed in addressing their remedies to the direct origin of the trouble. I recognize the fact that the dental practitioner fails oftentimes to

accomplish his best work with his patients for want of the general knowledge that is imparted by a school of medicine.

Dr. Vietor J. Baccus:—I was glad to hear Dr. Brophy emphasize the importance of recognizing lesions of the mouth as a primary source of infection. Mayo Robson, in speaking of the etiology of gastric uleer, states emphatically that in his examinations of patients with gastric uleer, mostly of the poorer class, he found them suffering from some form of mouth sepsis, and he thinks that gastric ulcer, in many instances, is secondary to mouth infection.

Dr. Charles S. Bacon:—I would like to take this opportunity to say that this is one of the most important subjects we have had before us this year, and that the presentation of it on the part of the essayist and the gentlemen who have taken part in the discussion has been very satisfactory. I believe that one of the points alluded to by the essayist, viz.: the relation of the dentist to the state of pregnancy, is a condition that should in every instance be emphasized by every physician who has charge of a pregnant woman. I make it a practice myself to inquire of every patient when she comes to me what is the condition of the mouth, and to send her at once, if there is any possibility of trouble with her teeth or mouth, to a dentist. Not only do I do this, but give this instruction to students in college. I believe this practice is of great importance, not only for the period of pregnancy and the puerperium, but for the whole future life of the patient. Every physician in every specialty and in general practice has, I believe, more points of contact with the dental specialty than with any other. Not a very large proportion of patients, especially in the earlier years of life, have to do with the oculist. Fewer still have to do with the otologist, and not a great number have to go to the gynecologist, but every one has to do with the stomatologist, and it is of the utmost importance that this contact be recognized, and I am very glad the paper has been read.

Dr. Bentley (closing):—I have not anything to say other than to thank the Chicago Medical Society for the kind manner in which the members have received my paper.

A regular meeting was held Feb. 14, 1906, with the President, Dr. Charles S. Bacon, in the chair. In a symposium on "Nostrums," papers were read as follows: "Some General Considerations," by Dr. Geo. H. Simmons; "The Subordination of Medical Journals to Proprietary Interests," by Dr. J. H. Salisbury; "Influence of Nostrum Literature on the Medical Profession," by Dr. N. S. Davis; "The Nostrum from the Viewpoint of the Pharmacist," by Prof. W. A. Puckner; "The Problem of the Synthetic Chemical Compound," by Prof. Julius Stieglitz; "The Responsibility of the Medical Teacher for Existing Conditions," by Dr. Charles S. Williamson; "The Council on Pharmacy and Chemistry," by Dr. J. H. Long.

SOME GENERAL CONDITIONS.

George H. Simmons, M.D.
General Secretary, American Medical Association.
CHICAGO.

(Abstract.)

Proprietary medicines are those which are controlled by a copyright or trade name, or by a patent. Those controlled by name only are usually mixtures, secret or semi-secret in character. There is no objection to proprietary medicines per se. The commercializing of the literature relating to our materia medica, however, is against a true scientific spirit and is demoralizing both to pharmacy and to medicine. Any preparation about which there is mystery regarding its composition must be classed with nostrums. Whatever is secret or mysterious is suspicious. This is a truism that does not need to be demonstrated. Secreey and mystery are the bulwarks of quacks and humbugs, and behind secrecy and

mystery the "patent medicine" sharpers hide while they swindle the public; and with them the exploiters of "ethical proprietaries" delude and humbug unthinking physicians. Remove the seerecy and mystery connected with these preparations, not only as regards their composition, but also (and this is important) as regards those who make them, and physicians who now prescribe some of these preparations would be ashamed to acknowledge that they had ever been so foolish.

Proprietary medicines may be divided into two elasses: Those advertised to the medical profession and those advertised to the public. The latter are called "patent medicines." This is an arbitrary, absurd and meaningless term, but one we evidently must continue to use. The former—those advertised to physicians—are usually called "proprietaries." But there is no difference between "patent medicines" and many of the so-ealled "proprietaries." The imaginary difference is that one is advertised direct to the public and the other direct to physicians, both being practically of the same character. Some, such as Duffy's Malt Whiskey, Scott's Emulsion, Fig Syrup, Antikamnia, Kutnow's Powder, Vin Mariana, Santal Midy, Apioline, Hydrozone, etc., straddle the fence and appeal both to the public and to the profession.

The following should be demanded of proprietary medicines: 1. There should be no secreey or mystery connected with their composition. 2. There should be no secreey or mystery regarding the firm which makes them or the place where they are made. 3. The manufacturers or agents should not publish anything concerning the therapeutic value which is untrue or which would tend to mislead. 4. They should not be advertised, directly or indirectly, to the public.

I. A physician not only has a right to know what he is giving his patient, but, also, he has no moral right to prescribe a preparation of which he does not know the exact composition. It is claimed that if the owner of a proprietary medicine should divulge the exact ingredients and the amounts of each, others would make it. In reply, there is hardly a nostrum on the market whose composition cannot be, and usually is, detected by the bright fellows connected with the regular manufacturing pharmaceutical houses, who, if they desire to do so, can put up practically the same product.

A common argument offered by promoters of proprietaries is that they have spent time and moncy in developing their products and hence cannot afford to give up their secrets. In reply, the only expense attached to the development of 99 out of every 100 of these preparations is that which has gone into bottles, labels, advertising literature, and in wages paid to smooth-tongued detail men to visit and delude the doctors. In this way they have undoubtedly spent money -lots of it-and successfully. But aside from this, all the talk about the time and money invested in developing these preparations is the veriest bosh. The capital required to start Antikamnia, a combination alleged to have been suggested by a physician, and which has netted a fortune to its owners, was simply that which was necessary for advertising. The ingredients were cheap and no skill was required to mix them. Ammonol, we are told, was the result of the suggestion of a physician that carbonate of ammonia should be used in place of caffein; and Phenalgin, it is alleged, is simply the result of another "company" branehing off from the Ammonol company, with practically the same mixture under another name. The amount of time and money required to work out the acetanilid mixture-Sal Codeia-Bell-I leave to your imagination. How much knowledge, time and money do you suppose were necessary to originate Tongaline, Neurilla, Pasavena, Anasarcin, Manola, Sanmette, Echthol, Neurosine, Benso Capsules, and thousands-I am not exaggerating when I say thousandsof analogous preparations? Are these anything more than ordinary simple mixtures of well-known drugs? Do they require more than ordinary pharmaeeutical skill to compound them? Are they any better combination of drugs than the average physician is prescribing every day?

II. Next to knowing what is in the combination we are using is knowing who makes it, whether the manufacturer is competent, reliable and has the necessary equipment. Ordinarily, when we buy an article of commerce, regarding the qual-

ity of which we have no confidence in our own judgment, we select a responsible, established firm, one which has a reputation, and we take this firm as a guarantee that the article will be up to the standard and one on which we may rely. Should we not do the same when we select medicines to prescribe for our patients? And yet one of the most noticeable facts connected with the proprietary business is that the vast majority of these preparations are supplied us by firms about which we know little or nothing. They are not, in the true sense, manufacturing chemists, if by this we mean that they are in the regular business of manufacturing pharmaccutical preparations. Such firms have their catalogues or price-lists, which include preparations—official or non-secret—called for in the regular course of such business. While some of these regular pharmaceutical companies put out preparations of more or less doubtful or fradulent character, this is a side issue with them. The nostrum output of all the regular manufacturing pharmaceutical houses is trifling compared with the vast number that are foisted on our profession by companies that are in no sense legitimate manufacturing pharmacists. These "pseudo" companies are usually made up of men who have no interest in or knowledge of either medicine or pharmacy. They are really promoters. Once in a while the "company" will be found to consist of a doctor or a druggist, who sees in this "specialty business" casy money. Ex-advertising agents, real estate agents, lawyers, etc., often comprise the personnel of these "pseudo" companies. Some of our "ethical" proprietaries are supplied us by the same men who, under other names, are supplying the public with patent medicines. Certain homeopathic pharmacists are running "pseudo" companies as a side line and exploiting nostrums to the regular profession. The great bulk of the nostrums are put out by companies that are neither chemical nor pharmacal, and these "pseudo" concerns bear the same relation to legitimate pharmacy as the ignorant quack doctor bears to an educated, honorable physician. And one is as great a curse to pharmacy and chemistry as the other is to medicine.

III. Of course, every secret proprietary vender will agree with this principle: that is, that there should be no untruthful statement made regarding the therapeutic value of a product. And yet, what a reflection on the honesty of the manufacturer and on the credulity of the physician is the mass of "literature" furnished by the majority of manufacturers of so-called "ethical proprietaries."

IV. No comment is needed on this proposition, for if physicians did not protest every proprietary vender would appeal direct to the public and to the physicians at the same time.

THE SUBORDINATION OF MEDICAL JOURNALS TO PROPRIETARY INTERESTS.

J. H. SALISBURY, A.M., M.D.

CHICAGO.

(Abstract.)

It is difficult to overestimate the influence of medical journalism on the opinions and actions of the medical profession. The medical journal, like the newspaper, is an ever-present friend whose influence and advice are potent for good or evil. Whoever gains control of the medical press goes a long way toward securing a paramount influence on the entire medical profession. The control of the medical press by the proprietary medicine interests is, therefore, a matter of vital interest to every physician, and it is worth while to inquire how great and of what character this influence is.

Most medical journals are supported by advertising. This is an important fact to be reckoned with in considering the reason for the subserviency of the medical press and in suggesting a remedy for the nostrum evil. No paper supported by advertising can pursue a policy antagonistic to the interests of its

advertisers and retain their patronage. No paper dependent on advertising can escape the influence of its advertisers. A journal which accepts the advertisements of proprietary preparations will observe a certain discretion in its advocacy of pharmaceutic reform, confining its denunciations to glittering generalities, firing blank cartridges, or at least directing its aim so as to be sure not to injure its friends.

That the majority of American medical journals can not be unfavorable to proprietary medicines is evident from an inspection of their advertising columns. Practically all medical journals carry advertisements of proprietary remedies. In one journal which is supposed to exhibit the highest ideal in the ethical conduct of medical journalism, 20 out of the 36 advertising pages were devoted to advertisements of proprietary articles; in another of high grade 9 out of 26 pages were used in the same way.

The extent of the subserviency of medical journals to the proprietary interests is further shown by the fact that a large proportion of medical journals have a department devoted to advertisements under the guise of reading notices, commercial news, therapeutic notes, etc. No pretense is made that these are genuine scientific articles, and it is tacitly understood that these columns are under control of the advertisers and that the articles are disguised advertisements. We note that financial necessity has compelled the paper to descend to the utterance of a commercial fiction, if we may not call it by a harsher name, and to become a silent partner to what frequently amounts to a scientific and commercial fraud.

In the next step, taken by a considerable number of journals, the editor and his contributors exhibit themselves as the willing slave of their proprietary master, having been bought and paid for. The write-up and the apologetic editorial exhibit the lowest stage of journalistic depravity. The journals subsidized by the proprietary interests comprise one-half of those published in the United States.

I went through 27 medical journals, covering the past six years, and found one preparation, viz., "peptomangan," as the subject of forty-five original articles. In addition there were six editorial indorsements of the remedy. One editor went so far as to take up arms in defense of his patron against the aspersions of a rival firm which were likely to injure the business. In a somewhat cursory survey covering about 15 medical journals for the last five years, I have found about 300 so-called original articles written in praise of the various proprietary remedies, and the list is by no means complete. I think that the evidence is sufficient to show that the medical press of the country is profoundly under the influence of the proprietary interests.

It may be objected that it is only the second-class journals which publish such articles. This is not entirely true, for such articles have been repeatedly found in the columns of some of the best periodicals in the country. Some openly uphold it; others silently consent; while a few, but an increasing number, positively condemn it. It must be remembered that the so-called second-class journals have, individually, a considerable and, collectively, an enormous circulation.

What is the character of the influence exerted on medical journalism by these nostrum venders? The scientific and practical value of the literature is markedly lessened. Clinical reports presented in behalf of some preparations make the claim and have the appearance of giving the results of careful clinical and experimental work. The sincerity of the authors of some of these articles we are not disposed to deny, but the scientific value of their work is much impaired by its one-sided character and the lack of comparison and critical judgment.

The result of inserting one-sided articles is to encumber the reading pages of the journal with worthless stuff and to create an uncritical habit of mind in the reader. Finding his time wasted in the careful reading of such articles, it is very natural for him to give little attention to the really valuable matter which may be interspersed between proprietary articles.

The journal which is ready to sell its columns to the nostrum vender can not be relied on to give the best editorial advice or to take a firm stand on the right side where the interests of the public or of its subscribers are opposed to the interests of the proprietary manufacturers. The editor of such a publication can not be a worthy leader of medical thought. He may expect to find his paper quoted to support sentiments that he never uttered. The journals by giving their space to extravagant statements regarding the effects of such remedies are fostering blind reliance on drugs and delaying the advance of truly rational therapeutics.

What remedy can be proposed for this state of things? Some regulation should be adopted as to the form of advertisements and the character of the remedies which should be admitted to the advertising columns. The editor who fails to protect his readers against concealed frauds, which is the only proper characterization for many of these "write-ups," is false to the trust reposed in him by the medical public.

The official organs of our state and national societies form a class of journals that could easily be made independent of such advertising. By extending to these papers our support we may enable them to raise American medical journalism to the level which it ought to occupy. The purified medical press may be the means of educating the mass of our profession so that physicians may no longer be robbed themselves nor become the agents of nostrum manufacturers in foisting on an innocent public preparations that are in many cases no better than the most fraudulent "patent medicines."

EFFECT OF NOSTRUM LITERATURE ON MEDICAL MEN.

N. S. DAVIS, M.D. CHICAGO. (Abstract.)

The greater part of the literature issued by manufacturers of proprietary medicines is more or less clever advertising of their wares. A small part is of scientific value. As a monopoly brings wealth, each house endeavors to put out a specialty of its own. While the best houses employ scientific men to test their products, the reports are often so summarized that disagreeable or injurious effects of preparations are lost sight of or minimized. Furthermore, the observations are not made with scientific accuracy or freedom from prejudice.

Much nostrum literature consists of impressions of various physicians as to the effects of different mixtures. The nature of the remedy is hidden. It is impossible to adapt dosage, if one dose is given to all. Ready-made prescriptions lead to slovenly reasoning and practice. Preparations are prescribed in ignorance of their composition. It is our own fault that manufacturing chemists and nostrum venders are so successful. Skillful advertising is responsible for the enormous sale of these preparations.

If we never tried a new drug there would be no advance in therapeutics. But manufacturers do not give us all the facts or sufficient proof of these facts. Preparations are exploited by advertising and by drummers with carefully rehearsed speeches. So-called original articles, lauding these mixtures, appear in some journals.

Therapeutic teaching should be confined to the drugs of the Pharmacopeia, which should contain all drugs of real worth and none other. Pharmacologic and therapeutic research should be stimulated, so that able men would devote their time to investigation along these lines.

THE NOSTRUM FROM THE VIEWPOINT OF THE PHARMACIST.

W. A. PUCKNER, PH.D. CHICAGO.

(Abstract.)

The insufficient instruction in materia medica, pharmacology, pharmaey and chemistry offered by schools of medicine is the direct cause of present conditions. This lack of proper training has made the physician dependent on ready-made remedics, proprietarics and nostrums, and has been the making of "patent medicines," has led to self-medication and to counter prescribing, and has been the cause of making pharmacists forget their professional standing.

The instruction in these subjects has been inadequate because of the limited time allotted to them and because the student is led to attach too little importance to them; also because of the instructor's lack of familiarity with the

subject which he is supposed to teach.

Two consequences are probable: 1, If the patient discovers the physician's incompetency, when again in need of treatment he will go to his pharmacist for advice; 2, when the physician comes to realize his lack of familiarity with medicines then he will fall back on the proprietary remedies, ready-made, with the dose on the label, of pleasant odor and taste and said to possess marvelous virtues.

Were physicians competent to judge the effect of the remedies which they administer the dependence on proprietaries would not be so bad, since many possess some merit. Unfortunately, the physician's training is likely to be such that he can not distinguish the rank fraud from the efficacious remedy. The following will illustrate how a physician often is led to use absolutely worthless remedies: Some years ago a preparation was placed on the market under the name of "Flora China," which was claimed to be "pure quinin sulphate," but to be tasteless and to do all that the bitter quinin would do. In appearance the substance resembled quinin sulphate and it certainly was tasteless, but on examination.\(^1\) I found it to be nothing but crystallized calcium sulphate. Yet some five years later a student told me that a certain physician prescribed it and had used no other kind of quinin for years.

The use of proprietarics by the physician must cause a lack of confidence on the part of the patient, or induce self-medication, or cause counter prescribing by the druggist and the making of "patent medicines."

Whenever a physician prescribes any of these remedies with nice, smooth, catchy names, patients will, sooner or later, learn what they are taking. If the remedy has the desired effect the patient will purchase his medicine direct and dispense with the physician's services. Furthermore, he will recommend it to his friends, using the physician's name as a guarantee of its virtues. Next its advertisements will be transferred from the medical journals to the daily press and the physician will have officiated at the birth of another so-called "patent medicine."

A practice still more reprehensible, it seems to me, is that of supplying patients with "physicians' samples." Seeing that his physician tries on him remedies about which he plainly knows nothing, the patient will prefer to consult the "patent-medicine" literature of the daily paper or will study the placards on fence posts and in street cars to find some remedy fitted to cure him, since to him it must seem that his physicians pursued a like plan.

THE PROBLEM OF THE SYNTHETIC CHEMICAL COMPOUND.

Julius Stieglitz, Ph.D.

CHICAGO.

(Abstract.)

Interest has centered naturally in two classes of manufacturers; those who appeal directly to the ignorance or the vices of the public to buy their patent medicines and nostrums, and those manufacturers who, under the ethical mantle

^{1.} Abstract Prac. Amer. Pharm. Association, vol. xlv, p. 710.

of dealing only with the medical profession, have been palming off on it under false names and titles, mixtures as bad as any produced by the first class. There is a third most important class of manufacturers, the manufacturers of the legitimate, so-called synthetic chemical compounds which are being so largely exploited in medicine. The most serious problem confronting us arises from the enormous increase in the numbers of such compounds.

The source of the rapid increase lies undoubtedly primarily in the competition for trade, in the desire for gain. The phenomenal commercial success of such synthetics as antipyrin, phenacetin, saccharin, etc., stimulated enormously the search for similar treasure-bringing discoveries, both in commercial and in university laboratories. The great commercial houses understand very well that for real and continued success they must offer preparations of real, intrinsic medical value, and to secure these they have been compelled to make science their handmaiden, and to go at the commercial problem through scientific experimentation. In this way they undoubtedly are doing a service to humanity as well as to themselves.

There is a legitimate, ideal goal toward which this branch of science has a right to strive; we have every reason to believe that with patient work we can improve vastly on the valuable alkaloids and similar compounds offered us by Nature. The great work of Fischer on the vital relations between the configurations of the sugar molecules and their ability to ferment and support life shows us the goal is not an impossible one. It is true that we have made comparatively little progress toward this goal—chemists have given to the medical profession a number of more or less valuable preparations, but their successes have been very few and this would be discouraging if history did not teach a lesson of patience.

It took our great organic chemist, Professor Baeyer, fourteen years to determine exactly the nature of indigo, and it took about fourteen more years to develop methods for the successful manufacture of this one compound.

This should teach us patience in our progress toward the goal of medical chemistry. The problem here is a far more complex and more important one, but it should lead ultimately to the chemical preparation of these specific antitoxins which we must now draw from animals.

In the manufacture of synthetics it is difficult to separate the good from the bad, and experience obtained at the expense of the one life, the one health of individuals, is too costly. Physicians do well to hesitate before this array of new synthetics. The manufacturers are interested parties; many so-called investigations and write-ups under unknown names are likely to be the bait in the trap. Shall physicians seek safety in standing still, or hesitate to take a forward step from fear it might prove a backward one? The only scientific solution of the problem lies in the establishment of some international institution for the impartial testing of promising new synthetics; or in the formation of central bureaus of critical disinterested review.

The need of a check even on our great houses was brought home forcibly to my mind in some recent examinations I had occasion to make as a member of the Council on Pharmacy and Chemistry of the A. M. A.: a preparation from one of our great American houses bore in its literature the truthful statement that it is acetylamidobenzene-trimethylxanthine. I wonder how many physicians recognize that these thirty-five letters spell in simple English acetanilide plus caffein, a mixture as bad as any of those recently exposed, but coming from a great reputable firm and parading correct chemical synonyms other than those usually employed by physicians. This same firm widely advertises to the profession a certain hypnotic as being much safer than chloral—it bears in its description the statement that it is a compound of chloraethanal with a higher

polyatomic alcohol, which is true. To a chemist that spelled at once chloral combined with glycerin. What physician, who would hesitate about prescribing chloral, would not like to use his own judgment as to whether chloral plus glycerin would be any safer? Physicians ought to insist that all chemical compounds should pass before some reviewing board which will insist that the manufacturers give the plain truth, the whole truth and nothing but the truth!

THE RESPONSIBILITY OF THE MEDICAL TEACHER FOR EXISTING CONDITIONS.

CHARLES SPENCER WILLIAMSON, M.D.

Professor of Clinical Medicine and Associate Professor of Medicine, College of Physicians and Surgeons; Consulting Physician to Cook County Hospital and Dunning Institutions.

CHICAGO.

(Abstract.)

The young practitioner is an epitome of the ideas of his teachers. The medical student must learn methods, plus the details of putting these methods into practice.

The physician differs again from most of his brethren in other professions, in that his knowledge must be so co-ordinated and correlated as to be available for instant use, without reference to any authority. The principles of the art and science of medicine must come first. They are the sine qua non for the successful understanding of any given medical topic. When one reflects on the enormously overcrowded medical curriculum of to-day, when every teacher on the faculty is clamoring for more hours for his especial subject, it is easy to understand that some things must suffer, and therapeutics is too frequently the one affected.

The professor presents a given case, discussing in full its etiology, pathology and diagnosis. The treatment is dismissed with a short reference to the general principles involved.

Time and again our most brilliant teachers will finish a clinic on chlorosis with the statement that the patient has been getting iron, and has been improving under its use. In one sense the details of its administration are unimportant, but it is exactly such teaching as this which leaves the student's mind in a receptive condition for the literature on the thousand and one iron nostrums which will pour in on him from the day he hangs out his shingle. The nostrum man thoroughly appreciates this fact. He takes particular pains to send with the very attractive looking samples precise information as to dose, administration, etc. Our young physician knows that iron is indicated. Why, then, should he not give preference to a preparation which, as the circular of information very distinctly tells him, will produce results far beyond anything contained in the Pharmacopeia?

If the teacher had spent ten minutes telling the essential facts in regard to the iron preparations, and that many of the newer iron preparations are worthless, the value of that clinic from a practical standpoint would have been doubled. If a student were told plainly that the claims of many nostrums are absurdly extravagant, and that for every nostrum one can find a better and simpler preparation from the Pharmacopeia, he would hesitate before putting his signature to a prescription for any such preparation. He should be taught to estimate at their true value the opinions of physicians whose principal claim

to fame rests on the fact that their name is signed to a report on the efficacy of somebody's cure-all. He should be told that more than one person has written laudatory reports of somebody's preparation for no other consideration than that he was well paid for it.

I requested a pharmaeist to go over some hundreds of recent, consecutive prescriptions, with the result that just 20 per cent. of these prescriptions call for some of these objectionable nostrums. I do not lose sight of the fact that a considerable number of proprietary preparations may be found by our Council on Pharmaey and Chemistry to have sufficient value to entitle them to consideration. But the nostrums to which I refer are such as are wholly objectionable because of their mode of advertisement, or because of the absurdly extravagant claims made for them. From this it will be perfectly apparent that the nostrum evil is one which has touched to a greater or less extent, not only the young and inexperienced practitioner, but also men of years of experience and reputation, in some cases the very elect.

A considerable portion, if not all of the instruction in therapeuties proper, should be under the auspices of the chair of practice and closely correlated with it.

CONCLUSIONS.

- 1. The subject of medicinal therapeuties in general has been subordinated in an undue degree to pathology and diagnosis.
- 2. In his teachings of therapeutics clinically the medical teacher has contented himself too often with vague general statements instead of recognizing that the subject is essentially one of detail, and entering on its discussion in the most minute way.
- 3. The teacher has presented the subject of therapeutics at the psychologically wrong moment instead of in direct connection with the subject of practice.
- 4. The teacher of materia medica has often failed to do his complete duty in not acquainting the student with the situation in regard to nostrums as it actually exists, and by thus sounding a note of warning, sending him out forewarned and forcarmed.

WHY THE WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY IS NECESSARY.

J. H. LONG. CHICAGO.

(Abstract.)

When it has been made plain that the public or some section of the public has been systematically outraged for years the question arises, What are you going to do about it? There was a time when most of the medicines used by physicians were prepared by themselves or by methods with which they were familiar. The food problem and the medicine problem have much in common.

The trouble is not because of lack of supply of good food or good medicine. There is more good sugar, good meat, good flour and good vegetables than ever before. So there is more good quinin, good ealomel, good opium or good chloroform in the world than ever before. We are being ridiculed, mystified and sometimes even bribed into believing that the thousand and one new things are so much better than the dozen or fifty old things with which we have been long familiar and the virtues and faults of which we know. The root of the whole evil may be referred back to the advertising mania. With great gain to the people as a whole, 95 per cent. of all advertising might be dispensed with.

The manufacture of standard drugs is a legitimate and long established business which requires no special advertising. Fake medicines must be advertised widely to sell. If the publicity can be checked the frauds must fail. The medicine manufacturer naturally looks to the medical journals as his advertising medium. If in the minds of the publishers of such journals the right sentiment against fraud can be created the battle for honesty and decency here is practically won.

But in striving to shut out the advertising of fake medicines there is always some little danger of excluding also a really meritorious article. There should be some way of proving the truth or falsity of the claim before accepting or rejecting an advertisement, and such considerations were among the first to suggest the value and importance of the Council on Pharmacy and Chemistry.

Until recently few publishers of medical journals gave much thought, apparently, to what went into their advertising columns, since most of these journals carried, and some continue to carrry, advertisements of medicines as preposterous as Lydia Pinkham's, Peruna, and Wine of Cardui.

WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

About a year ago the Council on Pharmacy and Chemistry was organized. This council consists of three committees—one on pharmacy, one on pharmacology and one on chemistry. The men constituting the council are active in different lines of scientific work related to medicine, and with this division of labor it is possible to scrutinize an article from several standpoints. Very often samples of the articles to be advertised have been sent to all members of the council for study. Already some good results have been reached and a number of fraudshave been publicly exposed. I recall, for illustration, the acetanilid mixtures, but these are not all. They were merely the beginning of a series, and as the work of the council progresses it will do for medicines what those connected with some of the state food commissions are doing for what we cat. Surely the medical man should know the exact nature of what he is asked to prescribe, and the work of the council is to find out and publish as far as possible the true nature of all articles of remedial nature offered to the physician.

This is a difficult undertaking and haste can be made but slowly. Above all things else, the work of the council must be correct, since great interests are at stake and justice to all must be done. The council does not care to pry into the secrets of the manufacturer's business, but it does insist on knowing the truth about the article manufactured if it is to be used in the treatment of disease. Hundreds of routine analytical and other examinations have been made and a good part of the time of the council has been consumed in investigating and, in some instances, showing up the fraudulent mixtures described as synthetic, which bear about the same relation to real synthetic preparations that a mixture of tacks, paving stones and ostrich plumes would bear to gold watches. Legitimate medicines have nothing to fear, but trash, hiding behind false descriptions, must be brought out into the light.

DISCUSSION.

President Bacon:—I think I express the opinion of the members of the Society, who have heard these papers, when I say that this is a wonderful collection of papers, and, perhaps, such a symposium as could be gotten up nowhere else in the country, or perhaps in the world than in Chicago. The credit for a symposium like this is due very largely to the initiative of the editor of The Journal of the American Medical Association, Dr. Geo. H. Simmons.

Dr. Ross C. Whitman:—There is no occupation in the world, I suppose, more pleasant than that of preaching; it is so easy and it makes one feel so virtuous. So I want to preach a little, too.

It seems to me that there are two or three points in connection with this symposium on proprietary medicines that have not been sufficiently dwelt upon. Some of them have been touched on lightly. The first point is one referred to by Professor Puckner, in reference to the southern practitioner who used calcium sulphate in place of quinin for a number of years, with entire satisfaction. I have contended for a long time that in ninety-nine cases out of a hundred, when a man wants medicine, it makes no difference whether you give him precipitated ehalk,

water, quinin, or any other placebo, he will get well anyhow, and in one case just as fast as in the other. This fact is largely responsible for the ease with which glowing accounts of the miraculous effects of remedies are obtained, and by some accepted. We are all prone, I suppose, when we give some particular drug in some particular condition, to ascribe the resulting cure to the drug employed, whereas, of course, this is often, indeed usually, far from the truth.

Then we need to remember that whatever the drug employed, its action is fixed and certain, regardless of the menstruum in which it is given, provided we are assured of its freedom from adulteration, and barring variations due to peculiarities of the patient. Whether aloes, cascara, glycerophosphate of lime, cod-liver oil, calomel, they remain always the same, no matter how administered. Aloes is still aloes, whether dissolved in syrup of lemon, syrup of prunes, simple syrup, or syrup of figs. This being true, no witcheraft or miracle is to be looked for in the use of one maker's preparation over that of another. Battle's Bromidia will put any one to sleep, it is true, but it is not Battle who does it. There is nothing mysterious about its action; it is simply the chloral, the cannabis indica, the bromids, the hyocyamus which do the work. If you wish knock-out drops you can put up just such a preparation for yourself, and if your preparation fails to do the work, you must confess ignorance of your dose book or conclude that Battle puts something in his not specified on the label.

A few years ago, when I used to do the buying for an institution in the country, detail men used to come to me and offer me their wonderful elixirs and syrups, and when I told them that I could put up my own easier than pay them \$2.50 a gallon for syrup, they almost doubted my sanity. If I wanted bromid they could give me an elixir of bromid, but no bromid "straignt." But I told them bromid was bromid, and it made no difference to me whether it was Jones or Peacock or quail who stirred the bottle. But they could not see it. And they offered me pills, emmenagogue pills, and approdisiac pills without number. The formula was always given, of course, but also, of course, there was some miraenlous good in that pill, beyond and above the formula, due to "the manner of compounding." This "manner of compounding" dodge reaches everywhere. Even

our old friend calomel did not escape. There was a preparation ealled calolaetose, one part calomel, nine parts sugar of milk; but I couldn't make that mixture

even if I wanted it. I didn't know enough.

Finally, for the remedy; it is always easiest to blame the other fellow. Adam's plea, "the woman Thou gavest me," is as old as the earth. But no true reform for the evils we are inveighing against to-night can ever be obtained without also reforming the evils which give it being. That is a truism of medicine. We must "remove the cause." I once worked for a short time under a chief who had in his medicine closet bottles labeled with the dose and indications of his remedies, but very little as to the contents of them. His reading was confined, so far as I could observe, to the more or less smutty stories in the back pages of the Medical Brief and other such journals. I believe that, just as the yellow newspaper, the dance hall, and other public evils, will flourish so long as they find a public to patronize them, so our evils will endure as long as we have in the profession men who consult the labels on the bottles, the advertising pages of the journals for help in a tight place, and who let the manufacturers of drugs do their thinking for them.

Dr. Rosalie M. Ladova:—The symposium of this evening has demonstrated beyond the shadow of a doubt that the use of proprietary medicines as well as nostrums is a primary evil. It is surprising to what extent these medicines are given and are recommended by practitioners of medicine. I remember very well when I started to practice medicine that detail men came to me and wanted to give a lecture about the use of certain medicines. I did not want to listen to them, but after seeing that other practitioners in the suite would take these men into their offices, give them their time, and treat them with a great deal of courtesy, I made up my mind I would have to do like the rest for fear of disagreeable notoriety. Every practitioner of average intelligence can not help seeing that he is not guarding his interests, his time, when he allows these detail men to bring

samples, listen to their lectures, etc. In this way practitioners are encouraging the proprietary interests. I believe we should take action in this matter. We should write editorials on the evil, and at the same time we should see that objectionable advertisements are excluded from the columns of medical journals without regard to the professional standing of those journals. We see medical men in high standing who are promoting proprietary medicines of their own make, who are putting them on the market and are competing with other drug houses that are in most instances lay concerns. I would suggest that this Society take some action to-night, by resolution, that it is inconsistent with our professional pride for medical men to encourage proprietary interests in any shape, way or manner, and that it is unprofessional for medical men to put drugs of their own preparation on the market, advertising them in the manner that drug houses do. Also, that it is not ethical for any medical journal to publish proprietary medicine advertisements under all kinds of names that sound like fairy stories in their advertising columns.

Prof. C. S. N. Hallberg:—Evidently Dr. Whitman is on the right track, but I do not believe that he made himself elear. What the doctor had in mind probably was this, that the physician should have a clear idea of the particular medicinal agent or agents that he desires to use, and then endeavor to formulate the various forms of medication that he desires to present, and if he eannot do this satisfactorily he can get the aid of the pharmacist. It is the lack of consideration of this which leads to the endless multiplication of all the different mixtures and nostrums. Just as Dr. Whitman has stated, we have various salts, for example, glycerophosphates, and if a physician wants to use them, there is no reason why he should take up any of the score or more different preparations of glycerophosphates, elixirs and syrups, etc., galore. Let him formulate his own preparations, with the aid of the pharmacist, or with the aid of the Pharmacopeia and National Formulary, and by so doing he can easily get a preparation which is satisfactory, and which will be much less in cost to the patient.

I would like to add one more thought to this symposium. There is a tendency on the part of those who are particularly interested in medicines, also a good many physicians, who believe that it is not so essential, it is not so necessary, to know just what a preparation contains, or what the medicine is; that if it does the work that is all that is necessary for him to know. A physician must know the character, he must know that there is a standard by which he can judge of the purity, quality and strength of the medicine he uses, otherwise there is nothing to prevent a manufacturer, or dealer, or pharmacist at any time from making such changes in these various preparations or characteristics as to defeat the purpose in view. In other words, the ideal of the pharmacopeia must be held to be the central idea. It is to insure uniformity above all, so that when a physician prescribes a combination of medicines one day or at any one place, he may and can safely rely that he will have the same preparation when it is dispensed again at some other place. It has been said by the essayists that it is perhaps impracticable for a physician to confine himself to the pharmacopcia. We may grant that as true. And it is true that the medical profession have not taken the interest in these things that they should have done, and that they are really responsible if there is any lack in the medical status of the pharmacopeia. But if physicians must go outside of the pharmacopeia or its supplement, the National Formulary, there is no reason why they should not utilize the pharmacopeia as the basis of their preparations or combinations of remedies. In other words, employ such medicines only as conform to the ideals and standards of the U.S. Pharmacopeia.

Dr. Edward H. Oehsner:—Two points have been brought out very prominently this evening in connection with this symposium, first, that the nostrum evil is a great one, and second, that we as physicians are fundamentally responsible for it. Professor Puekner has brought out the reason for this state of affairs. It is because we, as physicians, are not sufficiently well informed about chemistry and pharmacy. Our knowledge is deficient in these branches, because we have not been properly taught in our medical schools. Fundamentally, our med-

ical schools are at fault, because they try to teach us too many things about drugs. When I studied pharmacy and medicine, I was compelled to learn something about the 998 drugs then official in the United States Pharmacopeia. medical teachers and the State Boards of Health of this country would get together and agree upon a certain number of drugs with which the students and the physicians that come up before these bodies for their examination would be required to be familiar, it would then be possible for us to be well acquainted with the few important drugs, which are actually valuable in practice. During my course in college I prepared for a competitive examination, and in order to stand any show against my competitors I was compelled to know the names, doses, methods of preparations, etc., etc., ad infinitum, of 998 drugs. If I could bave spent all of this time on say 200 of the important preparations, my knowledge would have been much more valuable to me in practice later. As it was, I was compelled to burden my memory with a lot of rubbish, and consequently did not have time to learn the finer points about materia medica and pharmacy that would have proven very useful in actual practice.

Dr. ——:—It seems entirely unscientific for a physician to prescribe any medicine at any time, unless he knows that it is going to help the patient, and how it is supposed to help the patient. He should not prescribe any agent simply because some other physician, possibly a great man, has found it useful in a certain disease. If such a course is pursued we are simply doing what our grandmothers and quacks and faith curers are doing. We should always try to find out not only whether a given medicine is going to help a patient, but how, and have a definite idea in our minds how a drug is going to help the patient, and study along that line. It seems to me this is the only way we can arrive at a scientific demonstration of the kind of drugs to use.

Dr. Edwin B. Tuteur: -- I would like to say one word about a matter which has been to some extent overlooked. Most of the gentlemen stated that ignorance and lack of proper training had much to do with the non-prescribing of medicines by physicians, and with the consequent use of patented and other ready-made preparations. I do not agree with this statement in its entirety, but I do think that some of us have adopted a slovenly habit, so to speak, in regard to prescribing; that is, we will prescribe or actually tell people to use such preparations as castoria, syrup of figs, casearets or omega oil. If our patients ask us if they may use this or that patent remedy we will say, customarily, "Why, yes. use it; it is very good." And there are few of us here to-night who, when we have been asked by our patients whether castoria is not good for the baby, for they have it in the house, have not said, "Yes, give it to the baby. It is fine." Or if a patient has a sprain and there be omega oil in the house or in his brain he may ask the doctor if that is any good. And the doctor possibly replies, "No, I don't think you had better use it." Whereupon the wife may say that it once did her husband much good, and the doctor will carclessly remark, but in a half apologetic way, "Yes, it is pretty good; you had better use it. It won't be necessary for me to write a prescription." In short, it is oftimes the slovenliness of habit on our part and a sort of fear to run counter to the popular conceptions of the value of these commonly used and well advertised remedies, rather than ignorance, that causes us to accept and even prescribe them.

Dr. S. A. Matthews:—So far as the public is concerned, I have very little to say. They are the sufferers from the nostrum venders. Let me make one suggestion as a means of protection to the physician. I might say that a certain per cent. of physicians acquire their knowledge of materia medica and pharmacology very largely from the wrappers of sample bottles that are sent to them, and they do not always get it from low-class nostrum venders. I have seen such literature on pharmacology sent out from such a firm as Parke, Davis & Co.. which we all know is a reputable firm, and whose preparations are open and meritorious. Take, for instance, the preparation known as chloretone, which is a combination of chloroform and acetone. It is sent out by this reputable house as a great hypnotic. While the preparation is meritorious within certain limits, especially as a laboratory anesthetic, pharmacological research does not show

that it is a safe hypnotic to be used so indiscriminately as the firm's literature would indicate. This is an example of a leaning towards commercialism by a

reputable house at the expense of conservative facts.

In our education of the physician, a suggestion of this kind might be offered: There are various medical journals, but one in particular, that has a large circulation throughout the United States. It reaches more physicians in this country than any other one journal. Now, if that journal could secure the services of some competent pharmacologist to take up the various drug or chemical compounds that are of known use in medicine and discuss them in terms of physiology on the one hand and of pathology on the other, and draw their therapeutic significance from these sources in a short article in each issue of the journal, I believe it would stimulate the physicians to think more logically along these lines, at least it would be a means of educating the physicians along a much neglected line and lessen his tendency to put too much confidence in the literature of manufacturing chemists, and none at all in nostrum literature. It seems to me that a good deal of this prescribing of patent medicines or proprietary preparations arises largely from the ignorance of the physician, and yet I do not know that the physician himself is absolutely responsible for his ignorance. He has done the best he could; he has attended a medical school or schools, in which sufficient attention has not been devoted to physiology and pharmacology, and hence his so-called materia medica is nothing but a mere empiricism. While this mode of education would entail considerable work on the part of some one I believe the physicians at large would not only appreciate, but be willing to pay for such instruction.

Dr. W. C. Abbott:—Probably no question ever has or ever will come before the medical profession of this country of the magnitude and importance of the one which has been roughly presented to-night. I say "roughly presented" with all due respect to the able essayists, because they know, as well as we all know, that this is but the initial—the very beginning—of the great work before us. One of the important principles of commerce is that the demand determines the supply. Now, gentlemen, there is a reason for this most lamentable condition. The reason has been alluded to repeatedly to-night—ably, pointedly and thoughtfully so. It was broadly hinted at by Professor Ochsner, who has just spoken.

In our medical schools we are not taught clear-cut, optimistic therapeutics along with the clinical application of means and methods—departures from the normal, the exact condition existing, the physiological disequilibrium, and what in our armamentarium, be it drug or expedient, be it psychologic or what not, will reproduce equilibrium bringing the patient back to health. We go out from our medical schools, Mr. President, but weakly able to cope with disease. We go out as embryo self-suggested specialists, versed and interested in everything surgical and pathological; but where is the man who, when he goes out, can say squarely, and with honesty to himself and to his patient, that he knows, therapeutically, just the best thing to do in the ordinary conditions that constitute seventy-five, yea,

ninety per cent, of all the problems that come to the average physician?

You know, ladies and gentlemen, that I am speaking the serious truth. Our time in medical colleges is taken up largely by every other department of medicine excepting that of genuine therapeutics and practice. Unfortunately, the medical college does not pay its teachers as it ought to do; therefore, the man who gets the most out of it is the one who can profitably, and will give the most of his time to it, and he, we all know, is not the professor of practice, or the professor of therapeutics (and they should be one and the same). Therefore, I say, the great problem before us is how to so stir up this matter that more attention will be given to therapeutics. The gentlemen who have read these papers are beginning at the wrong end, but the only one available just now, and that is the pocket both of the doctor and the manufacturer. When this thing is well stirred up, when medical colleges begin to teach as they should, instead of having to take our therapeutics from the manufacturers of proprietary preparations, be they ever so good, we shall know a thing or two ourselves.

Dr. Simmons, in closing the discussion, said he desired to correct an impression that he feared had been created by Professor Long in regard to the

work of the Council on Pharmaey and Chemistry. In the beginning the idea was to have a committee to examine into the preparations offered for advertising in The Journal, but the movement has gone far beyond that. Professor Long referred to the completion of the work of the Council, but the work will never be completed, because it will have to be kept up so long as new compounds or mixtures are forthcoming.

One thing has not been brought ont, and that is that many of the preparations that are being offered to physicians are absolute frauds; and yet the Council, after discovering they are frauds, cannot publish them as such, without the full facts. The Council must be absolutely sure of every move it makes, and that every statement made is founded on facts that can be brought into court. The object of the Council is really to approve, not condemn, preparations. An exposure of fraud is necessary, occasionally, to arouse physicians to a realization of the fact that they are being humbugged.

JOINT MEETING OF THE CHICAGO OPHTHALMOLOGICAL AND CHICAGO MEDICAL SOCIETIES.

The meeting was held Feb. 21, 1906, with the President of the Chicago Ophthalmological Society, Dr. Geo. F. Fiske, in the chair. Dr. William H. Wilder read a paper entitled "Tuberculosis as it Affects the Eye."

TUBERCULOSIS AS IT AFFECTS THE EYE.

WILLIAM H. WILDER, M.D. CHICAGO.

The infrequency, one might say rarity, of any form of tuberculosis of the eve, in view of the great prevalence of the disease in certain other organs and structures, is a subject of comment among ophthalmologists. Furthermore, one would expect to find more frequent involvement of the uveal structure of the cye, in view of the fact that this part is so vascular and thus so favorable to endogenous infection. Again, the exposure of the eye ball and the conjuctiva to all kinds of infection would lead us to expect that tuberculosis would affect it through the air; but, while there is no question that this does occur at times and that in this way the eonjunctiva may even be the point of entrance for a general infection, still it must be admitted that this is comparatively infrequent. In this connection a few statistics as to the frequency of tuberculosis of the eye may be of interest. Hirsehberg, among 30,000 eye patients, found tuberculosis of the eye but 12 times; Kunz, among 30,000 eye patients, had 23 cases of tuberculosis. Eyre observed, among 31,000 eye patients, 11 eases of tuberculosis of the conjunctiva; von Milligan, one case of conjunctival tuberculosis among 20,000 patients. Terson, among 30,000 eye patients, saw 2 eases of tuberculosis of the iris; Stephenson, among every 1,500 eye patients, observed one case of conjunctival tuberculosis. As stated by Groenonw, such statistics are hardly to be considered of equal value, for with advancing knowledge and improved means of dignosis, the number of eases recognized as tuberculosis will probably increase.

EYELIDS.

There is a noticeably greater frequency of infection of the eye through that form of skin tuberculosis known as lupus, which may affect the eyelids, either primarily or by extension from the skin of the face. According to different observers primary lupus of the eye occurs in from 3 per cent. to 5 per cent. of lupus cases, while, secondarily, the eye becomes affected in from 25 per cent. to 40 per cent. or more of such cases. This is the form of tuberculosis which most frequently affects the eyelids, occurring in well-known, characteristic, small brownish nodules of soft consistence, that may break down and form ulcers or that may be absorbed and replaced by cicatricial tissue. In this manner the cyclid may be destroyed, and the conjunctiva and even the cornea invaded; or frightful deformities may result from the ectropion, and from shrinking of the conjunctiva: or the eyeball itself may be lost.

The theory that chalazion is of tubercular origin is founded on the histological appearance of structure resembling tubercle with giant cells, but this is by no means conclusive. Landwehr, von Wichert, and others have claimed to find tubercle bacilli in such structure, but the accuracy of the observation has been questioned because numerous inoculation experiments made by Henke, Ascheim and others have given negative results, and no reaction either general or local has followed injection of tuberculin. It can probably be safely concluded that chalazion is not of a tuberculous nature. The tarsus of the lids may become involved by an extension of the disease from the palpebral conjunctiva, and, in such an event, might possibly show a thickening that would simulate in appearance chalazion.

CONJUNCTIVA.

Tuberculosis of the conjunctiva is a rare disease and is usually primary. Denig, studying 72 collected cases, found that in 52 of them tuberculosis of no other part was demonstrable. In 14 of them there was suspicion of the disease, but in only 7 was tuberculosis of other organs present, apart from lupus or tear sac infection. The infection occurs from other tuberculous persons, from animals, from some tuberculous lesion on the patient's body, or from the sputum, if he has lung disease. Wounds or injuries, or even operations on the conjunctiva, may furnish means of entrance for the infection, and the presumption that an abrasion of the membrane is necessary to the introduction of the disease is strengthened by its remarkable infrequency. Valude declares that the tears not only wash away the germs that may gain access to the conjunctival sac, but that they actually inhibit the growth of those that might remain. The disease, usually unilateral and affecting young persons of from 10 to 30 years, is of several types. It appears as small tubercles, somewhat resembling enlarged trachoma follicles, miliary or larger ulcers, proliferations of the conjunctiva in tumor or polyp-like masses, and finally, as lupus. These different forms are by no means fixed types, but may pass from one into the other. For example, the tubercles may break down to form small ulcers; these may coalesce and enlarge, and around them may grow up the proliferations that form the polyp-like masses. The palpebral, rather than the ocular conjunctiva, is affected, although the latter may be involved by

The nodules vary in size and the ulcers are ragged, with dirty looking floor. The lid is usually thickened, probably from invasion of the tarsus. There is not much pain, and the secretion is rather scanty. In the course of the disease the cornea may be attacked, ulceration may occur, and an extension of infection may lead to paropthalmitis and loss of the eye. The preauricular glands and even the cervical and submaxillary glands may be enlarged. The differential diagnosis must consider syphilitie ulceration, trachoma and epithelioma. Histological and bacteriological examination may show clearly the character of the case, or, if it is doubtful, injection of tuberculin, or even inoculation experiments may establish the diagnosis. The prognosis in primary cases is not so grave, if the character of the disease is promptly recognized and proper treatment instituted. Severe destruction of the conjunctiva may occur, however, and it must be borne in mind that general infection may develop from such a focus.

CORNEA.

Primary tuberculosis of the cornea is even more rare than that of the conjunctiva, and, when it occurs, is probably dependent upon direct infection through an abrasion. The reason for the infrequency of this infection is probably to be found in the fact that foreign particles do not easily remain on the smooth surface of the cornea, but are swept off by the tears and the motion of the lids. When infection does occur, tubercles may develop in the peripheral portions of the cornea, or in the adjacent sclera, and gradually invade the central portions of the corneal tissue. The epithelium may break down and ulcers may form. The character of such ulcers may be determined by studying scrapings from them, in which tubercle bacilli may be found. In these cases of tuberculous keratitis the cornea presents the same appearance as that seen in rabbits or guinea pigs on which inoculation experiments have been practiced.

The form of keratitis known as parenchymatous or interstitial is probably more frequently of tuberculous origin than has formerly been supposed. Usually this disease, which affects persons before or about the age of puberty, or in young adult life, owes its existence to inherited syphilis, of which well marked manifestations are usually present in the majority of cases. In a small percentage of such cases, however, a number of observers, among them Michel and Bongartz, von Hippel, Wagenmann and Zimmermann, have demonstrated the presence of tuberculosis, the last named observer finding the bacilli. Enslin, who studied 24 such cases with tuberculin injections as a diagnostic aid, found in 11 of them clear signs of inherited syphilis, in 5 tuberculosis or a disposition to it, and in 3 evidences of both diseases. In the 8 cases he obtained typical general reaction, but not local, after the injection of the tuberculin.

I have now under observation a well pronounced case of interstitial keratitis in a healthy young woman of about 20 years of age, with no signs of inherited

syphilis, which has given a typical reaction to the tuberculin injection.

In such cases it is possible that all the appearances of the disease may be produced by the circulation in the cornea of the toxins of the tubercle bacilli, without the development of tubercles, and this is probably true in those cases of tuberculosis of the iris or adjacent sclera, in which the cornea is implicated to a certain extent. The cornea may, of course, become involved secondarily in tuberculosis of the conjunctiva, which manifests itself as pannus, and causes ulceration. A tumor-like mass develops around the limbus which may simulate epithelioma.

The treatment of corneal tuberculosis is largely local. Cauterization may be necessary. Inflation of the anterior chamber with air has been practiced with success by Koster. Subconjunctival injections of normal salt solution or mercurial salts may be practised and tuberculin injection may be tried. If the cornea is destroyed or the eye is blind, it had better be removed, as it may be the focus for a general infection.

IRIS.

Tuberculosis of the anterior part of the uveal tract, namely, the ciliary body and the iris, is somewhat more frequent than the forms we have been considering, although by no means so common as one might expect, in view of the vascularity of this part. It is doubtful if it is ever primary, except as a result of injury of the eye. The metastatic nature of the infection is fairly conclusively shown by the fact that in two-thirds of the cases reported there existed tuberculosis of structures other than the eye. Clinically, it manifests itself in two forms, disseminated miliary tubercles, and a single tuberculous mass, which from its appearance was formerly described as a granuloma. The form may be mixed, the small tubercles coalescing to form a single mass, while other smaller masses may develop in the adjacent region. In the first or disseminated form several small reddish nodules, varying in size from the tiniest to 5 mm. in diameter, and surrounded by a zone of small vessels, make their appearance in the lower quadrant of the iris, and by preference in the root zone, although not invariably, for they sometimes are seen in the pupilary zone, or at the margin of the pupil. They may increase in size and coalesce, or some of them may disappear, but the entire iris becomes discolored, loses its lustre, becomes adherent to the lens, and, in some instances, may be covered by a mass of exudate that conceals the tubercles, partly fills the anterior chamber, and occludes the pupil.

In the second form of the disease a solitary tuberculous mass develops slowly at the root of the iris, preceded by signs of iritic inflammation, which may, however, be almost entirely absent. This form of the disease is usually unilateral,

while one-third of the cases of disseminated form are bilateral.

The solitary tubercle mass grows slowly, but it may fill the entire anterior chamber, perforate the cornea, and present as a proliferating granulation mass which was formerly spoken of as a granuloma. In such cases the inflammation may be violent, with chemosis and edema of the lids and even swelling of the neighboring lymph glands. The course of the affection is usually slow, and, after a time, in favorable cases there is a recession of the disease, an absorption of the tubercles, and a certain degree of vision restored. To such benign cases, in which

it is supposed the infection is slight, and in which the bacilli are scanty, Leber has given the name, attenuated tuberculosis of the iris.

Several authors, notably Bürstenbinder, Quint, Miehel and Haas have maintained that another form of iritis, without tubercles, but of tuberculous origin, exists. According to Groenouw, in such cases there may be tubercles only visible with the microscope, or the inflammation may be excited by the influence of toxins. Michel and Haas go so far as to say that in 50 per cent of all eases of iritis and irido-cyclitis tuberculosis acts as an exciting cause. This seems to be an extreme position. In the severer eases the prognosis is grave. According to Groenouw in 48 per cent. of the disseminated eases enucleation was necessary, in 9 per cent. a blind eye was retained, and in 43 per cent. there was recovery with partial vision. It was more serious, however, with the solitary granulation form, for in this he records only 5 per cent. of cures, 6 per cent. of blind eyes retained, and 89 per cent. of total loss.

In a total of all cases of tuberculosis of the iris and ciliary body he finds that in 26 per cent, there was cure; i.e., preservation of the eyeball with a certain degree of vision, in some eases slight; in 9 per cent, the sight was lost, but the eye ball retained, and in 65 per cent. the eye ball was removed. The prognosis is noticeably less favorable in cases under 10 years and over 20 years, according to Schieck. Before the age of 10 years, 16 per cent. recovered, after the age of 20 years 17 per eent, recovered, between these ages 71 per cent, recovered. The diagnosis in typical cases will be made from the clinical appearances, but these are not absolutely reliable as the tubercles may be simulated by syphilis, lepra, ophthalmia nodosa, leuco-sarcoma or glioma. The only positive proof is the demonstration of the bacilli or the successful result of inoculation experiments. If the bacilli are very scanty both these tests may fail. As to the reliability of the tuberculin test in such cases there is naturally some question. I recall one case of tubereulous iritis, demonstrated as such by examination after removal of the eye, in which no reaction, general or local, followed repeated injections, but this was in 1891, before the present methods of using it were understood. Even if one observes a general reaction after its use, there may be no local reaction to guide him, and as most of these cases are secondary, it might be difficult to say whether the reaction was caused by the eye lesion or by some distant focus of tuberculosis. However, in eases of doubt, the reaction following the injection of tuberculin would be strongly presumptive of the tuberculous nature of the eye lesion.

The treatment must include constitutional as well as local measures. Of the latter, those suitable to iritis should be employed, but additional mention should be made of injection of air into the anterior chamber as practiced by Koster and Felix with favorable results. Evidence is accumulating that in tuberculosis of the eye, and particularly when the iris is involved, tuberculin in small doses of I/500 to 1/5 mg., or even more, is efficacious, and the unusually favorable results reported by von Hippel, Schieck, Reunert, Falckenberg, Gamble and Brown as well as others, go far toward demonstrating the value of the measure.

CHOROID.

The choroid is also affected secondarily by tuberculosis and usually metastatically. This occurs in the form of miliary tubercles or of a solitary tubercle as in the iris. In miliary tuberculosis of the choroid there are no outward signs of the inflammation, and the media remain clear, so that the tubercles may be seen with the ophthalmoscope. They are seen as yellowish white masses in the posterior part of the eye, from 1 to 15 or 20 in number, varying in size from the smallest up to that of the optic disc. They are not surrounded by pigment, and the retinal vessels pass over them uninterrupted. They are sometimes so small as not to be detected with the ophthalmoscope, and may be discovered by section at the autopsy. They sometimes grow rapidly and spring into view in a few hours. Both eyes are affected in more than half of the cases.

They are frequently found in acute miliary tuberculosis and especially in children, ocurring in from 35 per cent. to 45 per cent. of acute miliary tuberculosis and tubercular meningitis. In acute miliary tuberculosis they are of unusual prognostic import, often appearing a few days before the death of the patient. Again they may be of diagnostic value for they may be the first sign of a latent

tuberculosis. In the solitary tubercle or eonglomerate tubercle of the choroid, usually unilateral, there is a whitish prominent mass in the eye ground of the size of the optic papilla or larger that simulates in appearance a sarcoma. The retina is raised up by the tumor. It is secondary to tuberculous disease elsewhere. The patients are usually children or young adults, and usually die very soon; if they survive, the growth may perforate the selera and invade the orbit.

RETINA.

Tuberculosis of the retina is so rare that only a few eases have been reported. When it does occur it is probably associated with tuberculosis of the uvea or with an infection of the optic nerve; in the latter ease there would be seen severe papillitis which might obscure the tubercles in the adjacent retina.

The optic nerve head or the nerve itself may be the seat of tubercle. When the papilla is affected, the tubercles may be seen ophthalmoscopically, unless the resulting optic neuritis is so intense as to cloud the picture. The nerve may be affected without any evidence on the part of the optic disc until an atrophy begins to show. In general tuberculosis the nerve may be involved from an extension of the disease from the meninges, or from the bones of the orbit, and while visual symptoms may be present there may be no signs visible with the ophthalmoscope. The disease may develop by infection through the lymph spaces but in most eases is an extension downward of a tuberculous meningitis.

By way of summary it is well to recall the comparative infrequency of typical tuberculous lesions of the eye, if we except lupus of the eyelids; but there is strong presumptive evidence, as is pointed out by Miehel and Haas, that many diseases of the cornea, iris and ciliary body may be of tuberculous origin in that they are excited by the toxins of the bacilli, although no typical gross lesions develop. Whether in such cases the use of tuberculin injections would have the same diagnostic value as in those in which the lesion is distinctly defined, remains still for positive demonstration. That the use of this measure for diagnostic purposes is safe, and in a large degree reliable, is shown by numerous observations and reports, one of the most valuable of which is that by Tinker, who has used it in more than 400 cases in surgical diagnosis. Finally the use of tuberculin as a therapeutic agent in tuberculosis of the eye has been followed by such encouraging results and has received such strong endorsement by von Hippel, Schieck, and others, that one is constrained to believe that in it we have a valuable means for the cure of a disease that in most cases proves so disastrous to the eye.

DISCUSSION.

The discussion was opened by Dr. Arnold C. Klebs, who said:

The study of ocular tuberculosis from a general point of view offers opportunities for the enlargement of our knowledge of this disease, more so than that of any other local manifestation. The processes of tubercle formation, its subsequent metamorphosis, destructive as well as reconstructive, can often be studied here as nowhere else in the body. The extreme rarity of the local disease stamps it as a curiosum from the ophthalmological point of view, but I feel sure that with our increasing interest in the disease in general many valuable contributions are to be expected from a study of certain forms of ocular tuberculosis. Dr. Wilder has pointed out that with perfected methods of diagnosis we have come to recognize as tubercular certain changes formerly attributed to other eauses, and I believe we will still go farther and be able to discover and study tubercle formations (especially in the uvca) which although not producing symptoms, may add to our knowledge of the disease very materially. This leads us to the recognition of the fundamental fact, more and more insisted upon of late, that the terms "infection" and "disease" in tuberculosis do not have, necessarily, the causal relation which has been attributed to them, especially since the diseovery of the bacillus by Koch. The whole subject of latent infection, which is receiving more and more attention, is still very little understood and contribution to it from the ophthalmologist may promote a better understanding.

The opportunity for direct observation of morbid conditions in the eye has also made this organ a popular field of experimentation. The experimental proof

of the inoculability of tuberculous material, made by Villemin in 1868, and further elaborated by E. Klebs in 1868, and Cohnheim in 1869, was soon demonstrated also on the eye. Of interest are the early experiments by Armanni in 1872. He scarified the cornea slightly and introduced a very small quantity of cheesy substance in emulsion. He found the wounds healing rapidly, but after two weeks there appeared on the points of inoculation whitish gray, submiliary nodules, with subsequent ulceration and spread of the process to other organs of the body. Similar results were obtained by Cohnheim and Salomonson in 1877. In these classical experiments, they were able to produce, after the introduction of tubercular material into the anterior chamber, a tubercular iritis twenty to thirty days after inoculation. Salomonson later in 1879, by introducing in the same way previously heated tubercular substance, followed by the non-appearance of tubercles, proved the specificity of tubercle tissue. Baumgarten in 1880 and 1881 repeated Cohnheim's experiments with tubercular material obtained from cattle, with positive results, thus unconsciously anticipating one of the subjects which, in regard to tuberculosis research, occupies at the present day a most important position. Since the discovery of the bacillus by Koch in 1882 much experimentation on the eye has been done with pure cultures, but our knowledge of the disease has not been advanced much more than by the experiments with tubercular substances.

Greater attention was given to the conjunctiva, the great absorptive power of which for certain poisons, as atropin, was very evident. In the eighties, Valude, after a series of very interesting experiments, called attention to the paradoxical fact that the conjunctiva, though offering great resistance to the tuberculous virus, could, on the other hand, be very easily inoculated after previous injury. Cornet, however, later on, was able to produce glandular tuberculosis, after introduction of bacilli into the uninjured conjunctival sac, thus showing the mucosa of the eye to be able to assume the important rôle as a port of entrance for tuberculous infection of the body. That microörganisms can enter the body through the conjunctiva without leaving traces in this organ, has been demonstrated by other experiments. Mention may be made of the experiments of Morax and Elmassion by which they were able to bring about a very rapid and fatal disease after introduction of the cocco-bacillus of plague into the conjunctival sac.

Over twenty years ago Weigert called attention to the difference in the penetrability of the mucous membranes in infants and adults, showing how rapidly infective agents could reach the lymphatic glands at an early age. As you know von Behring of late considers this fact of paramount importance for the understanding of tuberculous infection of mankind in general. This point, no doubt, can receive further elucidation by further studies of these conditions as relating to the conjunctiva. It is quite possible that we may find that the conjunctiva assumes in this direction a similar part as that played by the mucosa of the intestines. Looked at from this point of view also, the scrofulous affections of the conjunctiva, the phlyctenular conjunctivitis, particularly, will become more and more interesting to the student of tuberculosis.

But also in the study of the processes of immunity, natural as well as acquired, the eye offers a wide field for instructive observation. Dr. Wilder has alluded to the diagnostic and curative application of tuberculin in this regard. The fact that we are coming away more and more from the standpoint formerly assumed, viz., that tuberculin constitutes only the toxin of the bacillus, brings the subject of tuberculin diagnosis and treatment into an entirely new light. Tuberculin, as a diagnostic, has value only when we critically take into account its limitations and failures. As a remedy, the results reported by ophthalmologists are distinctly better than those observed in other lines of medical practice, so much so that we ought to be induced to give it a more patient trial in other than eye cases. This is being done extensively abroad, but the opinions about its efficacy are still divided. This may be due to the much more complex condition in pulmonary tuberculosis, which make a final judment so extremely difficult.

Behring's discoveries, incidental to his endcavors of cattle immunization, have

brought out new facts about the biology of the bacillus and its relation to certain cellular activities, which are bound to further modify our ideas about immunity in tuberculosis. I have not the time to enter into this subject any farther than to merely point out its possible direction. Experiments on the eye have furthered, to some extent, a better understanding of the relative importance of humorigenic and cellular immunity. The anterior chamber with its aqueous humor, free from ecllular elements, offered distinct opportunities for comparative studies. Flügge, Nutall and others attributed its bactericidal property to the presence of a thermolabile substance (Buchner's alexine), while Metchnikoff showed that such bodies, called by him eytases, since they were contained within the phagocytes only, could not be present in the aqueous humor. Indeed, Pfciffer's phenomenon (granular transformation of cholera vibrios) does not take place in the anterior ehamber. For Metehnikoff this phenomenon is a valuable indication of the simultaneous presence of cytases and specific fixatives. The cholera vibrios introduced into the anterior chamber club together but remain alive for from four to six days. Metchnikoff, therefore, concludes that, of the two substances necessary to bring about the granular transformation, none are present in the aqueous humor, as is also the ease in the fluid of passive cdema. He admits, however, a certain bacterieidal action of the humor on a similar basis to that exerted by physiological salt solution, etc.

Calmette and Delarde's, and especially Rocmer's experiments with a non-bacterial immune serum, the abrin serum, produced by the immunization of rabbits with the extracts of the Paternoster or jequirity beans, have brought forth some interesting and suggestive results. Roemer found that the conjunctiva, as well as the spleen and bone-marow, are the organs where the anti-abrin is to be found in considerable quantities. These organs, as shown by Metchnikoff, are very rich in phagocytes and especially macrophages, which, according to him, play a primary rôle in the excretion of antitoxins in the body fluids, and he expects that this function is not only exercised by the mobile but also the fixed macro-

phages.

All these newer findings are eminently suggestive and no doubt will lead us to a better understanding of immunity. For the reason already given, closer observation with better instruments of tubercular affections in the eye, should further our knowledge of the most intricate problems, especially those relating to immunity against this disease. I can but regret that I cannot enter more

elosely into this fascinating subject.

Dr. Albert R. Baker, Clevcland, Ohio: -I have been very much interested in the paper of Dr. Wilder, and I always feel in following Dr. Wilder that there is not much left to be said. Before speaking of what is in my mind I wish to say I had hoped Dr. Klebs would mention the experiments which were made by Otto Bruns with regard to the injection of dead tuberele bacilli into the cireulation or blood vessels of the eye, inducing thereby a phlyetenular inflammation of the conjunctiva. We know that the old doctors have recognized, from time immemorial, what is known as phlyctenular ophthalmia as scrofulous ophthalmia, and what was described by the older doctors as scrofula we have found out to be tubercular. But, in this particular disease, I do not know whether we have made much progress or not; but by these injections Bruns was able to produce a disease of the conjunctiva that clinically and microscopically resembled, in the rabbit, phlyctenular ophthalmia. He was not able to get any of these phlyctenules on the cornea, as we find them on the cornea in children. If, however, we can demonstrate that phlyetenular ophthalmia is the result of toxins from a localized tuberculosis in some other portion of the body, we have made some progress in the pathology of this disease. I should like to hear from Dr. Klebs further on that phase of the subject.

With regard to the clinical aspects of this subject my attention has been ealled many times by pathologists to the frequency with which they have found tubercle in the eye, in which no such diagnosis as tuberculosis was made while the patient was living, and it has seemed to be a reflection on us as oculists. We ought to be able to discover a tubercular lesion in the eye, if it was present; and

yet the difficulties attending these examinations are very great. Let us take, for instance, cases of choroidal miliary tuberculosis. It is rather difficult to examine them in bed under the old methods, but with the improved electric ophthalmoscope it is easy. Within the last two or three years, in two cases I have assisted the general practitioner very materially in making a diagnosis. The question came up whether it was typhoid fever or miliary tuberculosis. I was able to discover miliary tuberculosis of the choroid, and autopsy subsequently corroborated the correctness of the diagnosis.

For a number of years I was connected with our City Hospital, Infirmary, and Insane Asylum in which we had about a thousand inmates. Instead of going to church I spent my Sundays for years in making systematic ophthalmoscopic examinations of these patients. I found among them a great many cases in which we were not able to find evidences of syphilis, but in which there was old choroidal and atrophic patches. In those cases in which there was little or no pigmentation, and not much evidence of other inflammatory trouble of the eye, I put them down as probably tuberculous. We had in this hospital a number of cases of tuberculosis or phthisis pulmonalis, in which we were not able to find tubercular eye trouble. Tubercular iritis was infrequent among these patients in whom we could exclude syphilitic infection.

I had under my observation the ease of a medical student who assisted the pathologist in this hospital. During his service there he became infected in some way between the chin and cheek. At first, he thought it was an ordinary furuncle. It refused to get well. Examination microscopically and inoculation experiments in rabbits proved it to be a tubercular infection. It was pretty thoroughly removed and touched with earbolic acid. That has been my treatment after removing the tubercular process, brushing the part with carbolic acid. From this treatment he recovered, but about a year later he developed iritis. There was a solitary tubercle on the upper portion of the iris. The case ran a mild course of ordinary iritis, with recovery, the eye being practically as well as it ever was. There was a posterior syncehia where this tubercle was located, only noticeable when the pupil was dilated. A year or two later he had a hemorrhage from the lung and soon developed severe pulmonary tuberculosis.

In that case I was positive that I could exclude any syphilitic infection or any other cause for the iritis. It impressed me with the fact that there were causes of iritis which we regard as idiopathic, but which are really instances of tubercular iritis. Another thing to be remembered is that tubercular iritis does not usually run a severe course; most cases recover. That vitiates the results of the tuberculin treatment. They get well without tuberculin injections, so that we must not attribute all the cures to the treatment.

One method of diagnosis has been suggested which might be followed out, but which I have not tried, that is, removing the aqueous humor and injecting it into the anterior chamber of the eye of a rabbit. That has been done by some Frenchman (Gourfinn), who insists that it should be done in every case. That may aid in making a diagnosis. One other practical suggestion with reference to the treatment of these eases is as to whether we shall enueleate the eye or not. I think statisties show that it is dangerous to enueleate the eye in these eases of tuberculosis unless the eyeball is going to perforate; that is to say, unless the tubercular process progresses so that the eye is going to rupture; if we enucleate the eye we may bring about general infection. Ragman reports two eases of his own that resulted fatally. He says fatal results after enucleation for intraocular tuberculosis are reported in eleven eases, eight times from meningitis, twice from pulmonary phthisis, and onee from miliary tubereulosis. In two there were local relapses, which in one instance was followed by death. In six of the eases it is expressly stated that there was good general health at the time of the ocular involvement.

Dr. William E. Gamble:—There is one point I wish to speak of and that is that there seems to be a general lack of appreciation of the difference between Koch's old tuberculin and Koch's tuberculin T. R. as regards their special field of usefulness. Old tuberculin is of value especially in non-pyrexial cases as a

diagnostie agent. New tuberculin is more valuable as a therapeutic agent, since it is less liable to produce systematic reaction, which, at all hazards, should be avoided when used as a therapeutic agent. The new tuberculin produces a local reaction that is diagnostic and in small doses without general reaction, both in pyrexial and non-pyrexial eases. Baer and Kennard in the Bulletin of the Johns Hopkins Hospital make the statement that the smallest focus of tuberculosis can be demonstrated by injections of small doses of the tuberculin T. R. For instance, they find that a child has a little stiffness of the back, but have no means of determining what the trouble is until they give a small injection of new tuberculin. The child so treated, in twelve to twenty-four hours, has a stiffening of the museles of the back and tenderness in that region. They have thereby been enabled to make a diagnosis of beginning tuberculosis. They have tried this in a number of eases and make the statement, in eonelusion, to the effect that the smallest focus of tuberculosis can be demonstrated locally by small injections of Koeh's tuberculin T. R. They do not count so much on a general reaction and I think the latest workers in this field, among them Wright of London and his coworkers, are believing more and more that a general reaction is of value as a diagnostic measure, but unreliable, especially in pyrexial eases, and absolutely dangerous if repeated as a therapeutic measure. Koch injected himself with 25 mg. of old tuberculin and got a pronounced reaction. It is known that, in some non-tubercular persons, 10 mg. of the old tuberculin will produce reaction. Local reactions are never produced without the focus or foci being tubercular.

I was in hopes that the work of Dr. Wright of London would be brought out in this discussion, because it seems to me he has made a step forward in the solution of this problem, and from his labors we are going to learn how to treat tuberculosis. The essayist made the statement that it is a difficult thing to diagnose these cases of tuberculosis of the eye. If a small dose of tuberculin produces a local reaction, that is, an injection of the vessels at the site of lesion and tenderness on pressure, which was markedly true in the case which I have reported, and we find also a low opsonic index, with increased negative phase following the injection of tuberculin, we have conclusive evidence of the presence of tuberculosis in the suspected tissues, and by the same means, we have a cure in many cases of tuberculosis of the eye, as has been pointed out by the essayist, and also a cure for tuberculosis of the glands and the subcutaneous tissue, as the classical work of Wright has demonstrated.

Dr. Charles H. Beard:—The subject of ocular tuberculosis has already been pretty thoroughly and ably discussed. There are, however, one or two points with regard to tuberculosis of the conjunctiva that I would like to mention. The eonjunctiva, when the seat of the disease, offers special opportunities for the study of tuberculosis. This is particularly true as regards the diagnosis, both elinical and experimental. For instance, the secretions from the eye can be examined microscopically. Scrapings can be taken from the membrane, and even portions can be excised for microscopic investigation. True, the results obtained from such examinations are usually negative from a bacteriologic standpoint, and mainly so from an anatomic also. But there is one form of experimental diagnosis of tuberculosis of the conjunctiva which has not been mentioned here tonight, and which is, probably, the least fallible of all methods that we possess. I refer to the inoculation method first applied to the eye by the late Parinaud in 1884. This is based upon the principles of the inoculation of animals laid down by Villemin in 1865, which consists in taking a small particle of the suspected tissue from the eye and inserting it very carefully, and with strict antiseptic preeautions, beneath the skin of the abdomen of a rabbit or a guinea-pig, preferably a guinea-pig, because this animal is considered more susceptible or more readily tuberculizable than is the rabbit. After a period of three weeks or a month, if tuberculosis is present, there occurs an inguinal adenopathy. The infected gland is then extirpated and in its center will be found the cheesy degeneration of tuberele, which, when examined microscopically, will show the Koch bacillus. There is another means of experimental diagnosis that has been recently promulgated and that promises to be quite reliable, viz., the agglutination method of

Arloing and Courmont, whereby agglutination is caused in certain cultures of the Koch bacillus by serum that has been extracted from a tuberculous subject. Tuberculosis of the conjunctiva also affords exceptional facilities for treatment, both medical and surgical. For example, topic applications are easily made directly to the part involved; and an excellent surgical measure for the eradication of the disease can be resorted to, viz., excision of the affected portion of the conjunctiva. Of course this can not always be done as the lesion may be too deep or to extensive to admit of it, but when it can be done excision, followed immediately by cauterization, is probably the surest of all means of cure.

Now as to the use of tuberculin. For diagnostic purposes the injection of this substance is extremely unsatisfactory, as we have seen, for the reason that the existence of tuberculosis elsewhere in the organism can not be positively excluded. In the employment, therefore, of tuberculin as a means of diagnosis of ocular tuberculosis, one must set store, not so much by the general effects, such as the rise of temperature, etc., as by the local reactive phenomena. But, as to the treatment of tuberculosis of the eve by injections of tuberculin, it can not be denied that this constitutes a valuable remedy. There is abundant evidence to this effect. Yet, the treatment of experimental tuberculosis in this manner has been far from satisfactory in many quarters. In an exhaustive series of experiments by Baas, for instance, with both tuberculin and the tuberculocidin of the elder Klebs, the disease seemed actually to become more virulent in the animals treated than in those used for control. Schieck has given as an explanation of this that there is a vast distance between experimental tuberculosis and spontaneous tuberculosis. The spontaneous form, particularly as it concerns the eye, is acknowledged by most authorities to be an attenuated infection, whereas, experimental tuberculosis is apt to be very much the contrary; that is, the bacilli are, as a rule, infinitely more numerous in the last. Another effective mode of treatment, peculiarly suited to tuberculosis of the conjunctiva, is that by radiation—either by radium or by the x-rays.

Dr. Arnold C. Klebs:—With regard to the Wright method of determination of the opsonic index for guidance in the treatment with tuberculous vaccines, I have not referred to it in my discussion because the whole matter is still in an experimental stage and much too complicated for practical uses.

Dr. Wilder (closing the discussion):—I purposely omitted considering therapeutic means that are applied in these cases of tuberculosis, because of the comparatively limited scope of the paper, and, therefore, the paper makes no claim of being a complete résumé of the subject. The purpose was more to take up the subject in such a general way as to draw attention to some of the newer phases of it, and, particularly, to elicit discussion.

As to the diagnosis of tuberculous lesions of the eye by means of tuberculin and the possible benefit of tuberculin as a therapeutic measure, we must all agree that tuberculin is a diagnostic aid, for at least 95 per cent. of tuberculous animals react to tuberculin. Unquestionably there are certain conditions in the human body where we get reaction with tuberculin, and an individual may be deceived. Furthermore, a negative result is not at all conclusive. As I stated in my paper the whole condition is obscure; if we have a tuberculous lesion elsewhere it makes the presumptive evidence stronger, particularly if we have certain clinical features. It does not give absolute testimony, however, that is valuable, because it does not exclude a focus elsewhere, which may be the primary focus. It has been well determined that most of these cases are secondary.

So far as the treatment is concerned, I did not go into that at all. I think the results are extremely encouraging. If we have opportunities for clinical observation we should look more carefully over the obscure cases of iritis, use the tuberculin test, and, if we get a reaction, try therapeutic means. As Dr. Baker has remarked, the fact that some of these cases of tubercular attenuated iritis have been wholly spontaneous, tends to vitiate the results of our experiments along this line. I want to refer briefly to a case which I now have under observation, and which some time I may have the pleasure of presenting before the society. The patient, a young woman, has interstitial keratitis. I see in the

iris some peculiar nodulation, suggestive of miliary tuberculosis. After taking her temperature for several days and finding it running so and so, with an afternoon rise of one degree, I gave her five to six mg. of tuberculin and got a typical reaction. She has the same condition of the left eye, which looks like a beginning interstitial keratitis, which any one would have said would yield to treatment in from three or four weeks to six months. It cleared up in two or three weeks under yellow oxide of mercury, and there was no opacity. There was spontaneous healing of the left eye. I got a typical tuberculin reaction, and it is a question whether the other eye will heal with tuberculin treatment.

INVOLVEMENT OF THE EYE IN SYPHILIS.

E. F. SNYDACKER, M.D.

CHICAGO.

All of us have seen may syphilitic eye diseases, all of us have treated many; in some we have had brilliant results, in others we have been completely baffled. We have formed convictions on the subject as the result of our experiences. On many points we are, perhaps, in doubt; on others have formed opinions, which may differ somewhat from the prevailing ones. In a paper of this kind, therefore, it may be of more value and more conducive to discussion to hear personal experiences and opinions, even though we may, in part, differ in our views, rather than to listen to a compilation from books, to which we all have access.

An affection commonly found in syphilis, although at the time it may not manifest itself in any way whatsoever, is the endarteritis of lues; other forms of the disease may yield to treatment but the endothelium of the body is never again entirely the same. Manifestly the vitality of tissues supplied by vessels with damaged endothelium and impaired walls suffers; affections due to this impaired vitality may occur years afterwards, when all other active signs of syphilis have disappeared. When we consider the eyeball and its structures, the cornea, with its surrounding zone of capillaries, the iris, consisting largely of endothelium and vascular stroma, the choroid, almost entirely a vascular structure, the retina, with its delicate nervous tissue dependent for nourishment on minute end arteries, we see of what great importance to the future welfare of the eye this fact may be.

Basing our opinion on this pathological factor of the disease, we may divide luetic troubles into two classes: 1. Those lesions of the eye due to direct syphilitic insult; i. e., those lesions brought about by the direct action of the syphilitic toxins on the structures of the eye. 2. Those lesions due to impaired vitality of the tissues caused by former involvement of the endothelium of the vessels nourishing that tissue, this type of lesion being, in reality, not a syphilitic one but rather a post syphilitic one. Bringing this down to more practical terms we have: 1. Those syphilitic eye lesions which we can cure by the employment of proper remedies. 2. Those syphilitic or rather post syphilitic lesions which we cannot cure. The key to the diagnosis between the two lies in the therapeutic test.

The antispecifics act brilliantly in class 1. They have no effect whatever in class 2. This distinction may be made in the eye lesions of both hereditary and acquired syphilis. And so we find, in the interstitial keratitis of hereditary syphilis, two types of the disease. One is promptly benefited by the exhibition of antispecifies, the other is not only not benefited but is positively harmed. Unfortunately, the only method we have of distinguishing between the two types of the disease is by actual therapeutic test. This test should be applied in every case, for in some cases it is undoubtedly of great value, although, in perhaps the majority of cases, it is worse than uscless. It should, therefore, be tried tentatively only; as soon as we are convinced that our remedies are doing harm rather than good we should at once stop them and employ roborant and stimulative measures. In these cases, antispecifics are best employed in the form of inunctions, the iodid of potash being given at the same time. That inunctions are by far the most satisfactory and effective way of giving mercury in the treat-

ment of interstitial keratitis has been noted. Probably in the majority of eases of interstitial keratitis antispecifics do no good. There are two causes for this; in one class of cases which are not helped we are dealing with the asthenic or impaired-tissue type, due to damaged blood vessels; in the other class of cases we are dealing with forms of interstitial keratitis which do not rest upon a syphilitic basis at all, but rest upon dyscrasia, due to a cause other than syphilitic.

What proportion of these cases is due to syphilis and what to other causes it is impossible to say with any degree of accuracy. As far as getting any history from the parents is concerned, I think most of us have found it so useless that we have long since eeased even to inquire, so that the only criteria we have as to whether a given case is one of hereditary syphilis or not are the well-known stigmata of that disease: Hutchinson's teeth, ragadæ at the angles of the mouth and nose, impaired hearing, joint involvement, etc., which are, however, by no means positive.

It has seemed to me that the antispecifics act best in those cases of interstitial keratitis where, at the same time, there is a marked involvement of the uvcal tract. This, however, is only a matter of opinion, resting upon the observation of comparatively few cases. As has been noted, the only means of determining posi-

tively is by actual therapeutic test.

Another form of hereditary ocular syphilis about which our knowledge is far from complete is the pigmentary retinal degeneration, mentioned by Haab, resembling somewhat retinitis pigmentosa and yet very different. It is difficult to say whether the pigment masses originate in the choroid or retina. They do not follow the course of the vessels. They are in diffuse blotches, heaviest at the periphery, usually with a dirty, yellowish tinge. The nerve is white and the vessels are small. Several times I have seen this condition present in cases of interstitial keratitis, so that I feel positive of its relation to hereditary syphilis. I have had four of these cases of pigmentary degeneration at the dispensary of the United Hebrew Charities in the past year. The vision in all of them was very poor. In several I tried antispecific treatment with no effect. In one of them the stigmata of hereditary syphilis were marked; as to the others, I am in doubt. Cases of hereditary syphilis of the eye in which it seems to me the antispecifics are most effective are those where an active choroiditis is taking place. I have such a case now under observation at the dispensary of the United Hebrew Charities, a girl, aged 9, with a saddle nose, ragadæ at the corners of the mouth, traces of an old interstitial keratitis, posterior synechiæ in both eyes, with dense patches of active choroiditis seattered about in the periphery of each choroid.

It would be of interest if we could get some information as to what percentage of the offspring of syphilities have involvement of the eye. It seems probable that the eye is attacked more than any other organ of the body in these cases, and still it has been surprising to me how comparatively rare I have found the eye involved in the offspring of those whom we know to have been syphilitic. Where I have examined children that I knew were the offspring of syphilities, tabeties, or those suffering from paretic dementia, I have always recorded the fact in the ease history. In looking over my private records I find it recorded there that I have examined fourteen individuals whom I knew to be the offspring of a syphilitic parent or parents, and, strangely enough, in not a single one of these cases could I find an eye involvement which could be attributed to syphilis. One case seemed of especial interest: the father, a syphilitic, died of tabes dorsalis; the mother, after a number of miscarriages, had given birth to seven living children; of these seven, three afterward died. I have examined the eyes of the mother and of each of the four surviving children, the youngest of whom is now 14 years old. The mother has a disseminated choroiditis and other signs of syphilis, and still I could find nothing wrong with the eyes of the children. The percentage of cases of diseases of the eye due to acquired syphilis is, I think, fully as great in private as in clinical practice. The percentage of cases of hereditary syphilitic diseases of the eye is, however, markedly smaller in private practice. The reason of this, in all probability, is that those children of syphilities who are under good

physical conditions are less apt to have interstitial keratitis than the children of clinical patients who are under less favorable conditions. The more intelligent individuals, moreover, usually undergo a longer and more thorough course of treatment than their less enlightened brethren.

Passing now to the eye diseases occurring in the course of acquired syphilis, one of the first things that strikes us is the infrequency with which we get a clear history in cases that are undoubtedly of syphilitic origin. This is often true, even in the case of really intelligent patients. There are, perhaps, two causes for this. Patients are apt to regard the oculist as somewhat outside the pale of the medical profession, and, therefore, they hesitate to confide in him as freely as in their family practitioner. On the other hand, where doubt exists in the mind of the patient as to the nature of his trouble, as it so frequently does, great blame attaches to the physician who originally treated the case. How frequently have all of us had some such dialogue with a patient! The doctor asks: "Have you ever had syphilis?" The patient, with great positiveness, replies: "Never." The doctor asks a number of questions and finally asks: "Did you ever have a hard sore on the penis?" The patient replies, reflectively: "Well, I believe I did have a sore once, but the doctor burned it and I took some pills and some drops for a few months, but I never had syphilis."

Of course, in all probability the doctor who originally saw the patient intended to treat him more than a few months, but he did not sufficiently impress the gravity of the disease upon him. The patient felt well, his chanere disappeared and he saw no need for further treatment. Just such cases furnish the severe ocular lesions that later come to the notice of the ophthalmologist. Many cases of so-called soft chanere, too, are taken too lightly, judging from the eye complications that are occasionally seen in these cases afterward. Many of us have had this experience in elucidating the history of an eye case, undoubtedly syphilitie, on questioning a patient as to whether he has ever had syphilis. The answer is: "No, I never had syphilis, but I did have a soft chancre once." Then, too, judging from the oculist's experience, the initial lesion and the secondary symptoms at times must be so slight as to entirely escape observation, for many of us have run across cases where the patient suspects and is willing to confess that he has lues, but, in all truth, has not the faintest idea when or how he acquired it.

Not long ago I saw a patient, a man 33 years old, who had a mydriasis of the left cye. The optic nerve head was blurred and the retinal vessels very tortuous. He was an intelligent man, perfectly frank, was willing to confess that he had been exposed more times than he had hairs on his head, that he had had gonorrhea countless times, was perfectly ready to acknowledge the possibility, even the probability, of syphilis, but how or when he was utterly ignorant, and still his symptoms yielded promptly to vigorous antispecific treatment, although up to that time everything had been tried in vain. We have, then, this element of obscurity constantly to contend with. Often the therapeutic test assists us brilliantly. Often, however, we are dealing with postsyphilitic vessel and tissue changes, where antispecific remedies leave us in the lurch and we never can be entirely clear as to the diagnosis.

Many practitioners expect too much of the oculist. They think he need but look at a case, and from its clinical aspect he can at once announce whether a given case of iritis is syphilitic or rheumatic, whether a retinitis is due to Bright's disease, diabetes or syphilis, whether a papillitis is due to brain tumor or lues. It is true the toxins of certain diseases have their points of predilection, but when we remember that almost all eye involvements, whether due to Bright's disease, lues, diabetes or what not, are primarily caused by damaged blood vessels, there must necessarily be a certain clinical resemblance between various manifestations of disease in the eye, even though due to entirely different causes, it being only possible to determine the cause when all the evidence and clinical findings have been carefully weighed and sifted. So, as a rule, the iritis of syphilis is merely a serous or plastic inflammation of that structure which, clinically, differs no whit from the iritis of Bright's disease or rheumatism, and it is only in the rarest cases that we see the characteristic iritis condylomatosa. This is true of

inflammations of the retina, optic nerve and other structures, although involvement of the choroid, unless in cases of high degree of myopia, is always to be viewed with the greatest suspicion.

Too often it becomes the reproach of the oculist that he is only a specialist and not a physician, that he observes only the eye and forgets that there are other organs in the body. A case was seen some time ago illustrating this fact. A Milwaukee colleague had treated a case of iritis, due to Bright's disease, to the point of ptyalism, although the patient had never had syphilis, and no urinalysis whatever had been made.

Syphilis attacks every portion of the eye. Even the lens, which for a time was thought immune, does not seem to be so in the light of recent reports. Syphilis simulates almost every eye disease or tumor. Bearing this fact in mind will often help us when we are in doubt. At St. Mary's Hospital I recently saw a young lady of unblemished antecedents with an enormously thickened upper lid, which hung down completely over the eyeball; the infiltrated cartilage could be felt pushing into the orbit. On everting the lid with great difficulty, the cartilage was seen to be a huge, yellowish, translucent nodular mass. She had come quite prepared for operation, but she had the good sense to prefer the unpalatable truth to a more unpalatable operation, and the consequence is that that ease of syphilitic tarsitis is doing nicely, under appropriate treatment, at the hands of one of the attending men of that institution.

A symptom which must arouse suspicion of syphilis, and which is, perhaps, at times overlooked, is a persistent non-inflammatory edema of the lids, where no other cause, such as a kidney lesion, disturbance in the nose, etc., can be found. I do not mean the intermittent, angioneurotic edema, the blepharocalasis of Fuchs, but those persistent non-inflammatory edemas which are eaused, as Neese has shown, by gummatous infiltration of the lid. I have reported one such case and have seen a similar one since.

Tumors of the orbit, especially those in connection with the periosteum, should always, before operative measures are employed, in case of the least doubt, be thoroughly tested by means of antisyphilitic remedies. I remember one such case in a middle-aged lady where there was no reason to suspect syphilis, unless, perhaps, because her husband had had a tabes. Here a dense elastic tumor, apparently in connection with the periosteum and large enough to displace the eyeball, could be felt at the upper inner portion of the orbit. This tumor entirely disappeared on the exhibition of iodids and mercury, and, though this was a number of years ago, it has never recurred. Of the ocular palsies and primary optic atrophies occurring either in the course of a tabes or a paretic dementia, we can say with absolute positiveness that they are never helped by the use of antispecifics, but, on the contrary, are always harmed. There is no way in which we ean hurry these patients down hill faster than to fill them full of antisyphilitie remedies. Probably nothing that we can employ works any permanent benefit, but if something must be given it should be roborant and stimulating rather than antisyphilitic remedies. These diseases, with their manifestations, are to be ranked with the postsyphilitic troubles, and here, as in all other postsyphilitic troubles, mercury and the iodids are worse than useless.

It is of interest to consider whether the prognosis in operative procedures on syphilities is much worse than on nonsyphilities. In two cases (four eyes) I have done iridectomies for chronic recurring iritis where antispecific remedies had done no good. I can not say that I saw any startling benefit follow any of these operations. Perhaps the trouble in most of these cases is that there are posterior synechiæ. When we attempt to seize the iris we merely tear off the anterior layer, leaving the pigment layer adhering to the capsule, so that in reality we do not accomplish an iridectomy at all. In four cases I have done cataract extractions on individuals whom I knew to be syphilitic. Two of these cases did not turn out well. One of them, a patient at the County Hospital, stood the preliminary iridectomy well, but a severe iritis followed the extraction, through which the patient lost sight in the cyc completely. In one other of these cases an iritis followed the operation, so that the final outcome was poor. In

the other two cases the result was a good one. It is an excellent plan to precede the operation by a course of antisyphilitic treatment, even though no active signs

of syphilis are or have been present.

I have never seen it mentioned in the literature or textbooks, out I do think there is some relation between lues and those cases of idiopathic ectropium where we find the tarsal cartilage thickened and distorted. Undoubtedly in these cases there has been a tarsitis, perhaps not severe enough to cause thickening and distortion of the lid at the time. The condition being, moreover, a painless one, the patient does not pay any attention to the matter until deformity sets in. I have examined sections of a number of such cartilages under the microscope and have found them diffusely infiltrated with round cells and full of areas of degeneration. either hyaline or colloid. From the microscopic examination it was impossible to state positively the cause of the trouble, but I have always suspected it was syphilitic. Occasionally in syphilitics we see retinal lesions undoubtedly of nephritic rather than luetic origin. It would be strange indeed if syphilitics were not more prone to kidney lesions than individuals with healthy blood vessels. In these cases autisyphilitic treatment is to be entered upon with the greatest caution, as it is more likely to harm than to benefit.

The treatment of syphilitic eye losions consists of the exhibitions of remedies which combat the systemic infection, combined with such local treatment as the occasion ealls for. In regard to local measures there is not much to be said. Where iritis is present we strive, by the use of atropin, to put that membrane at rest. For a while subconjunctival injections of bichlorid of mercury were the fad, but they were intensely painful, created a tremendous reaction and did not seem of especial benefit, so that they have been pretty generally abandoned. Still, in those obstinate cases where nothing else avails, perhaps they are worthy of a trial. I have tried them where they have seemed to be of undoubted benefit. Where the iris dilates with great difficulty I have found it very useful to employ the pure atropin sulphate in the eye. As much as can be held on the point of a small knife blade is placed in the conjunctival sac, great care being taken to hold the lachrymal passages shut with the finger, so as to prevent atropin intoxication. If this is not effective, then I know nothing that will avail. In the lesions of the choroid, retina, optic nerve, etc., our whole reliance must be placed on systemic treatment. Here the ophthalmologist is very prone to make a mistake. As a rule he sees the late lesions of syphilis and is, therefore, very apt to exhibit iodid of potash alone, to the utter neglect of the mercurials. This I believe to be a mistake. Where there is an involvement of the eye which is caused by direct syphilitic insult, irrespective of the stage of the disease, mercury in some form should always be employed, and the more critical the condition the greater the indication for its employment. We should never rely upon the iodids alone. The two can be used very nicely together, the mercury in the form of inunctions or injections, the iodids per os.

The two forms in which the mercury can be used most effectively are either in the form of inunctions or injections. In critical cases to give mercury per os is, I think, a mistake. Eye lesions in that respect are on a par with brain lesions. Every day, every hour, they do irreparable injury. Probably in these urgent cases the best way of giving mercury is in the form of injections. A preparation that has done me good service is the salycilate of mercury, suspended either in albolene or benzoinol, injected deep into the gluteal muscles, so that the patient receives about one grain of the drug every four days. I have used this treatment repeatedly and have never had an abscess follow an injection. The treatment is, however, very painful, and it is quite pathetic to see these patients limp away after a treatment, so that in ordinary cases the inunctions are to be preferred. In clinical work, however, where we are dealing with the ignorant and careless, the injections are more effective and can be better controlled. Inunctions to be effective must be rubbed into the skin from twenty minutes to one-half hour. Clinical patients have hardly the patience or the intelligence to do this. When. however, the physician injects the drug he knows exactly what the patient is

getting.

In administering iodids I have found it neither necessary nor expedient to give the enormous doses which some advocate. It is a good plan to be guided as to the size of the dose by what the patient can take without too great a degree of discomfort. Where the patient has an idiosyncrasy against the iodid of potash I have used the iodonucleoid or injections of iodipin, 25 per cent. strength, with

good results. To recapitulate the contents of this paper:

1. In syphilities we must distinguish between two classes of lesions, the syphilitic and the postsyphilitic. 2. The syphilitic lesions are helped by antispecifies; the postsyphilitic ones, on the other hand, are rather injured. 3. This distinction holds good in hereditary syphilis. 4. In a large proportion of syphilitic eye diseases the history and clinical aspect are more or less obscure and must be elucidated by careful investigation of the complete clinical aspect of the case and the therapeutic test. 5. Syphilitic eye diseases simulate almost all other eye diseases and ocular tumors. This fact must always be borne in mind in entering upon the treatment of a suspicious case or the operation of a suspicious tumor. 6. Antispecific remedies are uscless in the treatment of the ocular manifestations of the postsyphilitic nervous diseases. 7. Eye operations upon syphilitics have a more unfavorable prognosis than upon the non-syphilitic. 8. Syphilities are prone to kidneys lesions, which may cause retinal lesions, which have only an indirect causal relation to the lues and are, therefore, not benefited by antispecifics. 9. The treatment of syphilitic eye lesions consists of proper local treatment, with appropriate systemic medication. This consists of the use of mercury and iodid of potash, the mercury being best given by means of inunctions and injections and being always indicated in every stage of luetic eye lesion that is due to a direct syphilitic insult.

DISCUSSION.

Dr. Oliver S. Ormsby was asked to open the discussion. He said: I was much interested in the paper of Dr. Snydacker, not, however, from the standpoint of the oculist, but from the viewpoint of the dermatologist. There is no subject that is so interesting to the dermatologist as syphilis, because of its many cutaneous manifestations. I shall confine what I have to say, inasmuch as my time is limited to five minutes, to a few points in eonnection with the diagnosis. As I have had the opportunity on several occasions to examine cases with eye lesions in which syphilis was suspected, I shall try to review a few of the important points which are aids to diagnosis.

As Dr. Syndacker says, the history given by the patient is usually not of much value. So much apparent deceit has been practiced by these patients that it was once said that all syphilities are liars. This is far from true, and though their history as given might deceive the physician it is not intentionally done. The discrepancies are due to ignorance of the conditions on the part of the patient or to his misinterpretation of what he sees, and also to his forgetfulness. The initial lesion may have been extragenital or intraurethral, and hence escaped notice, and the patient is consequently deceived. Extragenital chancres may attack the eye structures. Two such cases were reported last year. Dr. Mewborn, of New York, reported the case of a patient having a chancre on the cyclid which had developed in the area occupied by a stye. The stye was treated with silver nitrate, as well as copper sulphate sticks, and Dr. Mewborn believes the infection was carried in this way. The patient developed preauricular adenopathy and later the cruption and the usual symptoms of syphilis.

Again, relative to the patient's history, the secondary manifestations may be so mild as to escape the attention of the patient, or he may misinterpret them without any fault on his part. The examination of the patient, however, often reveals a history that is most important. There are stigmata of both hereditary and acquired syphilis that will help in making an accurate diagnosis of syphilis. Several of the important signs occurring in the hereditary form were mentioned by the essayist, among which are the linear scars about the corners of the mouth, scars about the ano-genital region, the peculiar deformity of the nose, changes in the bones of the skull, nodosities, irregularities, etc., and changes in the long bones, especially the tibiæ. Hutchinson's triad—interstitial keratitis, notched

teeth and ear disease—is, perhaps, not so important as was once thought. If, however, several of these stigmata be found, syphilis must be considered. In the acquired form it is often difficult to positively demonstrate the presence of specific disease.

Syphilis is one of the diseases characterized by latent periods, increasing in duration as time passes. The bacteriology of the disease, not having been settled, is at present of no absolute value to us in diagnosis. I expected to hear Dr. Schmidt speak on that phase of the subject to-night, but, unfortunately, he is not present. During the past year much laboratory work has been done on the baeteriology of syphilis. The most prominent place has been given the spirochæta pallida, which is a spirillum about one-half a micron in width and three and onehalf mierons in length. This has repeatedly been found in the initial lesion, often in the secondary lesions and oeeasionally in the late lesions, as well also in the internal organs in congenital syphilis. A very small protozoön with flagella, the cytorrhyetes lues, has also received much attention. For a long time investigators in the field have believed that when the active cause of syphilis was found it would be a protozoön, so this organism is especially interesting. It has been suggested that the spirochæta pallida might be merely a stage in the life history of some protozoön. The microseopie anatomy, too, is not conclusive in all eases, as a similar condition may be found in other disorders, so that to-day we have still to rely largely on the elinical findings.

Some of the important points in this investigation in the acquired form are the following: One examines for relies of the initial sclerosis, and if a scar is found in the site formerly occupied by a venereal sore it is of value; but in this connection it must be remembered that soft, non-specific lesions which have been eauterized leave sears. Glandular enlargement, taken in connection with other findings, is of value, but at the moment of examination there may be simply slight fusiform enlargement, the main part of the former increase having been absorbed by the degenerative and absorptive processes which occur on subsidence of the active symptoms. Careful search should be made about the ano-genital region for recurring mucous patches, condylomatous lesions or scars. The mouth and tongue, too, are favorite sites for mueous patches even late, as well as fissures, sears and other irregularities. Pigmentations, the sequelæ of former lesions, as well as sears on the skin, should be sought for. On account of the peculiar history of this interesting disease, with its periods of latency, it seems justifiable to think that the entire human organism is invaded early in the disease, the chancre being the infection atrium and the first visible lesion, after which follow the generalized secondary manifestations, due to general dissemination of the active virus, and finally the deposit of this virus in various parts of the body, to lie inactive until again aroused into activity by some local external or other irritant, producing the localized deeper lesions of the late stages.

Periostitis, especially of the long bones, is important, but one must remember that though this ordinarily occurs late, it may be a very early manifestation. One or even two or three of these various signs would not settle the question, but if in a given case with suspected syphilis of the eye one finds several of the lesions or stigmata on the skin, mucous membranes and bones, we would have sufficient presumptive evidence to make a diagnosis of syphilis. The symptoms produced by postsyphilitic lesions, whether in the eye or elsewhere, will not be benefited by specific treatment. I mean by postsyphilitic those that conform to the essayist's definition. In these, actual destruction of tissue which can not be restored has occurred.

Dr. Frank Hugh Montgomery:—I did not eome here prepared to say anything. However, the topic is an interesting one, and both papers have interested me greatly. Two or three points occur to me. One is the question of the frequency of conjunctival tuberculosis by primary inoculation. Dr. Syndacker referred to the percentage. In Copenhagen, when I was there two years ago, from a careful study of nearly 1,000 cases it was shown that from 60 to 70 per cent. of all cases of lupus vulgaris originated within the nose. That being the case, it would make the number of cases of primary tuberculosis of the conjunctiva very much smaller

than he has given it. Regarding the treatment of syphilis, I agree heartily with the stand taken by the writer of the paper, who has expressed himself as being strongly in favor of the mercurial treatment of all eye lesions and against the use of the iodids. I think it is a common mistake on the part of many practitioners to treat these eases with iodids.

In regard to the diagnosis, there are a few features to be remembered. We frequently find lesions on the soft or hard palate, the border of the tongue, or in some part of the mouth there are mucous patches or a beginning leukoplakia. We find similar lesions about the nose. We have also the other manifestations referred to by Dr. Ormsby. As to the history in these cases, it is one of the most difficult things we have to contend with, whether we view it from the standpoint of an oculist, neurologist or dermatologist. A patient comes to us who has been infected and wants treatment for a disorder which either the physician has failed to diagnose accurately or which, having made a correct diagnosis, he treats by the rapid method, by an occasional visit on the part of the patient to some springs, by vigorous treatment for a short period, and then stopping treatment for a longer period, or, as Dr. Snydacker has said, after a certain period the patient will neglect treatment. The most dangerous period in a syphilitic during the first two years is that period when he feels well, so well that he does not know that there is anything wrong with him, unless the practitioner has warned him forcibly of the possible dangers. That is the time when he is apt to forget or come to the conclusion that his physician has made a mistake. If at that time he consults an expert who neglects symptoms and treatment, he may get an opinion that he has not syphilis. It is easy to get conflicting opinions in regard to such a case. There are cases in which the primary manifestations of syphilis are never seen, even if we watch for them; the papular manifestations are very slight. No definite symptoms on the teeth are present until we get the deeperseated or tertiary lesions, so that one of the most difficult tasks we have to undertake is this careful sifting out of the ills and of getting a clear history of the disease. In syphilitic and postsyphilitic diseases of the eye and other lesions there is no sharp dividing line which can be drawn between them.

A joint meeting of the Chicago Surgical and Chicago Medical societies was held Feb. 26, 1906. The Vice-President of the Chicago Surgical Society, Dr. D. W. Graham, in the chair.

• The subject for discussion was a symposium on "Heus." Dr. J. M. T. Finney of Baltimore, Maryland, read a paper, by invitation, entitled "Post-Operative Intestinal Obstruction."

The author detailed twenty-six cases, referred at length to the literature, and drew the following conclusions: 1. Broca's classification into early and late varieties simplifies the diagnosis. In the former class, which so frequently is associated with peritonitis, the differential diagnosis as to variety is always difficult and often impossible. In the latter, which is composed almost exclusively of the mechanical forms, it is usually easy. 2. Adhesions are the chief factor to be reckoned with in an attempt to prevent the occurrence of post-operative ileus, and efforts directed toward this end are likely to be productive of the best results. 3. That drainage exercises a marked influence in the production of adhesions cannot be deuied. 4. As to treatment, prompt operation is indicated in every case, after palliative measures have been given a fair trial and have failed. The character of the operation depends on the nature of the obstruction and the condition of the patient. 5. The prognosis is unfavorably influenced by the presence of infection. In its absence, it is excellent.

DYNAMIC ILEUS.

Dr. John B. Murphy defined ileus as a train of symptoms consisting of four essential elements, one or the other preponderating in its influence. First, pain in the abdomen: second, nausea and vomiting: third, meteorismus; and, fourth, coprostasis. Using this as a guide he subdivided ileus into three great divisions,

adynamic ileus, dynamie ileus, and meehanie ileus. Under adynamie ileus he includes all of the conditions that are due to the absence of power of propulsion. Under dynamic ileus he includes two conditions where obstruction is due to an excess of power, and excessive contraction of the muscular wall. Under mechanic ileus he includes all the mechanical conditions, whether of the strangulation or obturation variety, which impede the advancement of the contents of the intestinal canal in a mechanical way. In the removal of tumors from the mesentery, as fibromata, myomata, lipomata, tumors of that elass, if the greatest care is not exercised in separating the mesentery from the tumors, and in ligating the blood vessels or nerves of the mesentery, it will be followed by paralytic ileus, which may lead to a fatal termination. The eases which puzzle the general practitioner and surgeon are those included under adynamic ileus. One of the first causes of this form of ileus is strangulation of the omentum. The general practitioner is ealled to treat a ease of strangulated omentum, with pain, absence of peristalsis, distention of the abdomen, nausea and vomiting, and coprostasis, or inability to get a bowel movement. Every surgeon has been confronted with such cases, where, within the first forty-eight hours, illness eomes on, with evidence of obstruction in the lumen of the bowel of mechanical origin, and examination and laparotomy showed that there was nothing whatever in the hernial canal but a portion of omentum. Strangulation of the omentum produces a reflex paralysis of peristalsis.

As to hepatic calculus, the eolie that occurs with it is difficult to differentiate from mechanical obstruction, because we have pain, nausea and vomiting, absence of peristalsis, with distention of the bowel coming on as the result of the paralytic condition; also coprostasis while the pain is severe. One of the very difficult things to diagnose differentially is the impaction of stone in the cystic duet. There is another class of eases in which the manifestations of ileus are pronounced from the ligation of the pedieles. He thinks since the practice of ligating pedieles en masse has ceased, there is much less vomiting after operations and fewer cases of paralytic ileus now than formerly. Gastric tetany is another form of paralytic ileus that is mistaken for intestinal obstruction. Peritoneal trauma is a eause of paralytic ileus. The embolic type of paralytic ileus is due to two causes: First, interference with the nerve supply; second, ischemia. Temperature is never a primary symptom in mechanical ileus, not even in intussuseeption in children. He thought at one time that leueocytosis was going to be of enormous value in the differential diagnosis. He believed that the infeetive type would show a high leucocyte count, while the mechanical type would show a low leucocyte count. He had been greatly disappointed. He has seen a 36,000 leucocyte count (differential) in mechanical ileus. He has seen a 7,000 leueoeyte count in a case of septic peritonitis, so that he has eeased to place any particular value on the differential diagnosis as to the number of leueocytes.

STRANGULATION ILEUS.

Dr. Arthur Dean Bevan said that strangulation ileus is best studied from the standpoint of a strangulated hernia. It is a form of ileus which comes on as a strangulated hernia does, with sudden onset, with shock, with pain, with obstruction of the bowel, with vomiting, with later tympany, and, if unrelieved, peritonitis usually, and death. It is at the beginning free from temperature. The diagnosis can be made early if the surgeon has a clear mental picture of what strangulation ileus means. It means such a condition as this within the abdomen: A loop of intestine is strangulated, as a loop of intestine is strangulated in the serotum; this very soon becomes paralyzed and distended. There is in almost all cases of strangulation ileus a period at which, if the loop of intestine is of fair size and the abdominal wall not too thick, the strangulated loop ean be determined by the local distention and the absence of peristalsis. At the same time, in strangulated ileus, there is not a paralysis of the afferent bowel, but the afferent bowel makes a great effort to overcome the obstruction, in that way causing pain, symptoms of peristalsis sometimes visible, and invariably the passage or rumbling of gas which can be heard with the stethoscope. If we have that mental picture in mind we can usually, if the case is seen early, make an accurate diagnosis, and that means everything to the patient. It means immediate operation. Dr. Bevan discussed the character of the operation and the conditions found as the cause of mechanical ileus when the abdouten is opened. Meckel's diverticulum is the eause of probably more than 5 per cent. of the cases of intestinal obstruction. A long appendix, or adhesions to a tube may cause obstruction. A most common cause is probably volvulus. He recently saw a case of volvulus of the entire transverse colon which caused obstruction. The forms of ileus which are described as due to strangulation in the retroperitoneal fossæ are quite infrequent. They do occur, however, and must be kept in mind. Cases occurring in the intersigmoid fossa, in the pericecal fossæ, iu the duodenal fossæ, in the foramen of Winslow, are rather rare surgical curiosities, and he does not think anyone has had any considerable experience with strangulation due to hernias of this type. The proper treatment of a case of strangulation ileus by the medical man is the making of an immediate diagnosis, and then urging immediate operation. Patients with mechanical ileus die because an early diagnosis is not made, because early operation was not done, but early diagnosis and early operation would have saved life.

OBTURATION ILEUS.

Dr. William E. Schroeder mentioned the classification of Schlange, who considers obturation ileus, in its broadest sense, to include compression from without, strictures, both benign and malignant tumors in the lumen of the intestine, intussusception, and the usual obturation forms, namely, from gall-stones, enteroliths, foreign bodies, and fecal masses. The nature of the obstruction consists in the simple closure of the lumen of the intestine, either primarily from within, or through compression from without. Obturation ileus is sometimes produced by an intussusception. The ileoeccal valve is by far the most common seat for this lesion. Then follows the small intestine, and lastly, the colon. The length of the intussusception may vary from a small piece to many feet. Thus, Schlange observed a case of the ileoeccal variety where the valve presented itself beyond the anus. The invagination of the large intestine usually occurs in the sigmoid. He discussed the symptoms of the acute forms of obturation ileus, also the diagnosis.

With reference to treatment, in obturation ileus, enterostomy is of especial value in relieving the intestine of its poisonous contents, and because of the simplicity of the operation. A radical operation may follow at some future time when the patient is in better condition. In strangulation ileus it is necessary to relieve the strangulated intestine and save it from gangrenc, or to resect the gangrenous portion. In general, it may be said that the cases of ileus come into the hands of the surgeon much too late. Many general practitioners wait for feeal vomiting before they transfer the case to the surgeon.

ABUSE OF CATHARTICS IN OBSTRUCTION OF THE BOWELS.

Dr. M. L. Harris recently saw a patient suffering from a strangulated inguinal hernia, with an enormous abdomen, and vomiting every few minutes, who was still trying to get his physic down between vomits, and another patient with acute appendicitis, where the attendant wondered why no result followed the cathartics, in which an operation disclosed a very large opening in the cecum left by the sloughing-off of the appendix, and through which the intestinal contents, chased by the cathartics, had escaped into the abdominal eavity. Numerous other cases illustrating all the varieties of intestinal obstruction were mentioned. Whenever the bowels are incapable of acting by reason of any of the obstructing causes, cathartics, by stimulating in vain the peristalsis of, and increasing the amount of fluid in, the proximal portion of the bowel, favor intestinal putrefaction with absorption of toxic products; eause a reverse flow of foul offensive fluid into the stomach, with the production of exhausting vomiting; so damage the bowel immediately cephalad to the obstruction as to favor the migration of microbes into and through its walls; increase an intussusception; hasten the cutting through of a constricting band or ring; aid in the extension of paralysis; facilitate the dissemination of infection; and, in fact, do infinitely more harm in less time than could possibly have resulted from the primary trouble had it been left undisturbed. These facts, which rest on sound reasoning, accurate pathology and clinical experience, cannot be too strongly emphasized. Catharties should never be given to a patient suffering from an acute abdominal trouble until a diagnosis has been made, or, if not an accurate diagnosis, at least until all of the conditions which may produce obstruction have been positively excluded. It should be remembered that these patients are never sick because the bowels do not move, but the bowels do not move because they are sick.

In the general discussion Dr. Fernand Henrotin said, with reference to diagnosis, that there are many cases in which catharsis is given when the diagnosis is not clear, where the symptoms are not typical, so as to render the making of an accurate diagnosis more easy, and in such instances the administration of a cathartic is permissible. As to enterostomy, in a paper on its value written seventeen or eighteen years ago, he dwelt on the propriety, in cases of ileus, of not stopping to do a radical operation in the advanced cases, but simply performing an enterostomy.

Dr. Finney, in closing, said the plea of Dr. Harris to lessen the number of cathartics given to these suffering patients is very timely. Surgeons are agreed that cathartics have a very limited place, but their administration should not be overdone.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held Feb. 13, I906, with the president, Dr. Otto T. Freer, in the chair. Dr. Herman Stolte, of Milwaukee, Wis., read a paper entitled "Does Denker's Radical Operation of the Antrum of Highmore Represent a Progress in the Surgery of the Sinuses?"

DOES DENKER'S RADICAL OPERATION OF THE ANTRUM OF HIGH-MORE REPRESENT A PROGRESS IN SURGERY OF THE SINUSES?

> DR. HERMAN STOLTE, MILWAUKEE, WIS.

Every nasal surgeon, who has often had to deal with surgical operations of chronic empyema of the antrum of Highmore, knows that the radical operations advised by Boeninghaus (Archiv. fuer Laryngologie, vol. vi, I892) and Luc-Caldwell ("1900 Lecons sur les Suppurations de l'Orcille Moyenne"), which were looked upon up to the present time as radical operations—that is to say, as operations that would lead in a comparatively short time to a lasting cure—have not always given satisfactory and lasting results. These facts are due to four reasons:

1. In resecting the facial wall (canine fossa) of the antrum, according to Luc or Boeninghaus, it is with considerable difficulty that we are able to evacuate thoroughly all the diseased tissue from the anterior inner angle of the cavity, curetting through the hole made in the canine fossa. This portion of the antrum, owing to the deep alveolar grooves and their strongly projecting bony ridges being the seat of most extensive pathologic changes, large masses of granulations, polypous tissue, necrotic bone, etc., will produce an abundance of granulation tissue with suppuration, interfering with the normal course of the healing process.

2. The permanent opening in the lower external wall, which we are obliged to make in this operation, does not, as we all know, involve the more anterior portion of the nasal wall, owing to the difficulty in getting to these parts with our cutting instruments through the opening in the canine fossa. In the same manner the most posterior part of the lateral wall of the lower middle meatus, on which we preserve the attached posterior part of the lower turbinated body, is usually not removed. On its anterior border remains hanging or attached a portion of the mueous membrane lining the middle part of the wall, through which the permanent opening into the nose is made. This flap, if not thoroughly removed, is apt to be turned inward by the following tamponade and placed toward the

posterior inner angle of the antrum, forming here a kind of blind sac, closing up this corner from the chief cavity and causing here a new source of suppuration. These remaining parts of the nasal wall of the antrum, anteriorly and posteriorly, projecting into the nares like a stage side wing, prevent, during aftertreatment, a free view of the antrum and control of the healing process, consisting in the application of nitrate of silver to the new formation of granulation tissue, especially in the anterior and posterior inner angle, and a thorough irrigation of the cavity. Hence we fight in vain against a constantly renewing and obstinate suppuration, which lengthens unnecessarily the duration of the aftertreatment and prepares the ground for recurrence.

3. The floor of the antrum, especially in its anterior corner, with its marked pathologie changes, needs an especially thorough evacuation of all diseased parts. Hence these parts showing, after operation, bare bone without any lining, require a long time to be covered again with a healthy lining, and are, therefore, during

that time, subject to suppuration

4. The artificial opening to the nose, due to its location far back and due to the posterior part of the nasal wall, and the remainders of the mueous membrane wall attached to it, has a great tendency to grow smaller and smaller and in time close up almost entirely, leaving a fistula, which will certainly produce a recurrence in the same manner as in Lue-Ogston's frontal sinus operation. Several attempts have been made to improve Luc's method and to overcome some of the difficulties in this operation. Boeninghaus advocated the formation of a mucous membrane flap, formed out of the lower nasal wall, in order to eover the floor of the antrum, hence shortening the healing process. His method of obtaining this flap through the facial opening, by first breaking down the bony internal antral wall from the mucous membrane, makes it extremely difficult to obtain the desirable unlacerated flap.

Dr. P. L. Friedrich, in order to overcome the difficulties in dealing with the anterior inner angle of the antrum, advocated the open method, which consists in making a curved incision in the groove of the ala nasi, and from the middle of this incision a perpendicular one running outward and downward, half an inch in length. Then resection of the bony junction of the nasal and facial wall of the superior maxillary bone around the aperture pyriformis outward, continuing into the canine fossa, posteriorly continuing to the anterior portion of the nasal wall. Eventually, also, resecting the anterior portion of the lower turbinal. After a careful suturing of the external wound the author claims to have no visible sears or other facial disfigurements. The principal objections to this operation are the possibility of visible scars due to the liability of secondary infection and the insufficient access to all parts of the cavity through the comparatively small opening. Kretchman² attacked the anterior inner angle of the antrum by extending the gingival labial incision from the second molar to the frenulum labii superioris, adding two rectangular small incisions on either side and upward, then exposure of the facial antral wall, extending to the aperatura pyriformis, then detaching the mucous membrane of the nasal floor, and external nasal wall of the lower meatus, beginning at the apertura pyriformis, inserting afterward a strip of gauze between the detached mucous membrane and the nasal wall, then resection of that part of the nasal wall corresponding with the lower meatus, thereby preserving the most anterior portion. The formation of the flap out of the detached mucous membrane of the lower meatus, and placing this on the floor of the antrum and fixing it by means of a firm tampon inserted through the nose, completes the operation. Kretchman does not sacrifice the lower turbinal on account of its important physiologie functions and does not close the oral wound in order to facilitate the after-treatment. Healing of the wound and restoration of the antral eavity to a healthy condition takes place in about six weeks. Kretsehman, profiting by Friedrich's experience, that no disfigurement may occur, even by sacrificing the bony boundary of the apertura pyriformis, recommends for the

Deutsch. Med. Woch., 1904, No. 37.
 Munch. med. Woch., 1905, No. 1.

future operation the complete removal even of this part. One year later Professor Denker, of Erlangen,3 put in practice this idea of Kretschman. His method, varying in several principal points from Kretschman's method, represents a combination of Boeninghaus', Luc's, Friedrich's and Kretschman's methods, uniting in one method all the conspicuously advantageous points of each. Mucous membrane incision is immediately below the gingival labial fold, beginning from above the second molar and extending to within one-fifth of an inch of the frenulum labii, then running one-third of an inch upward. The soft parts, including the periosteum, are then lifted upward by means of an clevator, the bone being laid bare, including the apertura pyriformis. The mucous membrane of the lower meatus (lateral wall and outer part of the floor), beginning on the very edge of the apertura pyriformis and extending back one and one-half inches, is then lifted up by means of a bent blunt elevator. A small strip of gauze is inserted between the mucous membrane and the bony lateral nasal wall. The resection of the facial wall is then carried out to such an extent that a perfectly free view of all parts of the cavity is secured and digital exploration is possible. After thorough removal of the diseased lining and morbid contents of the antrum by curettement, especially along the floor, excluding the healthy, simply thickened parts of the lining, the resection of the nasal wall of the antrum is carried out, beginning on the lower and lateral edge of the apertura pyriformis, in a backward direction and by means of a chisel and bone forceps. If the pathologic changes in the antrum are very pronounced and the ethmoidal cells and sphenoidal sinus are also affected, the resection should be extended into the infundibulum, following by curettement and opening of the affected sinuscs. The lower turbinated body having been resected in its anterior two-thirds as a preliminary operation, especially when it is strongly developed, especial stress should be laid upon the fact that every particle of the bony ridge between the floor and the antrum and the lower meatus be chisled or bitten away, so that a perfectly smooth surface results. From the detached mucous membrane wall of the lower meatus Denker forms a rectangular flap, one and one-quarter inches long and one-half inch high, or higher in case the bony wall has been removed up to the infundibulum. The flap starts just behind the ali nasi. The flap thus formed is then turned over into the antral cavity and fixed upon the perfectly denuded floor by inserting gauze tampons through the nasal opening. The exact closure of the oral wound by suture finishes the operation. The packing is removed in four or five days through the nose without any pain or discomfort. This is followed by daily repeated washing of the cavity with normal salt solution by means of a big catheter abruptly bent, or by means of a soft rubber bulb, the tip being inserted directly into the cavity. The ease of the after-treatment is the most striking feature in Denker's operation. The patient is practically independent of the physician after the packing has been removed, a point apt to be of some importance in dealing with out-of-town patients or patients whose time is limited. There is no painful removal of the packing or daily removing of the latter, as the permanent opening is so large that the patient himself can insert the tip of the rubber bulb into the cavity with the greatest ease, and is able to cleanse it with the current of the solution, every part of the cavity, as the floor of the lower meatus is continuous with the mucous membrane of the new-formed lining of the antral floor, thus representing one smooth surface devoid of any projections of bare bone (as in Luc's operation); the pain during the after-treatments, like in Luc's operation, is excluded. Immediate closure of the oral wound, which heals permanently after four or five days, is a great improvement over the open treatment of Kretschman through the mouth cavity, with its danger of irritation and reinfection. The greatest advantage of this operation is that it gives us the large nasal opening far in front, so that we are able to control the posterior half of the cavity with our eye; the anterior one-half with a small rhinoscopic mirror, and thus to keep down every pathologic growth of granulation or polypous tissue. Any accumulation of pus behind the lateral part of the anterior nasal wall, or in the anterior inner angle of the cavity, is also excluded. Further, the large opening located well to the front renders the occurrence of a relapse impossible. In

^{3.} Archiv. für Laryngology and Rhinology, vol. xvii, No. 21, and following.

the Luc operation we are sometimes confronted by the condition that the permaneut uasal opening of the antrum, due to the unfavorable location being out of view, especially when the patient has not been able to come regularly for the after-treatment has nearly closed or so narrowed, after some time, that a thorough draining of this cavity or even inspection is out of the question. According to the impaired drainage, the suppuration becomes increased; the granulation, inside of the cavity will proliferate, and within a short time we have to resort to a new operation for the cure of the recurrence, a fact which confronts us likewise now and then in Luc-Ogston's frontal sinus operation. These are depressing experiences, hence we ought to be only too glad to know of a method which renders these recurrences absolutely impossible. One of the objections offered is its magnitude. I must confess, out of my own experience in three cases, that the simplicity of this operation in comparison with Luc's or Boeninghaus', is most surprising. We all know how difficult the step is in Luc's operation to remove through the hole in the canine fossa so much from the lateral nasal wall, as it should be done, or in Bocninghaus' operation to form an unlacerated complete mucous membrane flap of the uasal wall. All these steps are done with the greatest case and much quieker in Denker's operation. The hemorrhage is not greater than in Luc's operation. So far as the dread of possible consequent disfigurement (falling in of the cheek) is concerned, I think nothing can convince you more to the contrary than a glance at this patient. This lady had been suffering for the last eighteen years from sinus empyema of both sides. While on the left side only the antrum and anterior ethmoidal cells were diseased, without any odor existing, on the right side a pronounced infection of all the sinuses, except the sphenoidal, existed; the pus ran down constantly in streams, the stench being simply fearful. Polypi developed gradually. She had been operated on by Senn, of Chicago, about twelve years ago. The patient came under my care about the 12th of November, 1905. In a preliminary operation the anterior two-thirds of the right lower turbinated body was removed, and on the 25th of November the radical operation on the right frontal sinus, anterior and posterior ethmoidal cells and antrum of Highmore was performed. The frontal sinus was operated according to Tilley's (London) or Coakley's (New York) obliteration method. It left a small retraction of the scar, which I am going to overcome by paraffin injection in the near future. The antrum operation according to Denker was done at the same time. In removal of the lateral nasal wall and the formation of the flap the lack of difficulty in comparison with Luc's and Boeninghaus' operations struck me, but yet I hope we can shorten the time of breaking down the lateral wall considerably by using especially suited forceps which I am going to have made. The removal of the strong lateral pillar of the apertura pyriformis, which has a diameter of nearly half an inch, requires a very sharp chisel and careful chiseling, together with the use of strong bone forceps. Too violent chiseling is liable to produce fractures in the body of the superior maxillary bone. The antrum cavity was without pus about two weeks after the removal of the dressing; the suture in the gingival labial fold healed by first intention; the frontal sinus required about eight weeks to become obliterated by granulation. Three weeks ago I began treatment of the ethmoidal cells and antrum of Highmore on the left side, which, owing to the mild character of the pathologic changes, required only minor operations; on the one hand, curetting out the ethmoidal cells and on the other breaking down the membranous part of the antral wall of the infundibulum by means of Myles' excellent cutting trochars. The hole was made large, so that the patient can do the syringing of the antrum herself. Slight secretion is still present on this side, but only of a mucous character. This side is also healed, practically. The preserved periosteum on the right side has already formed new bone, and no disfigurement whatever has resulted from this very extensive operation. It is selfevident that I do not recommend Denker's operation for every case of chronic antrum empvema. A considerable number of chronic cases of short duration, especially when the antrum is secondarily diseased, thus acting as a reservoir for the pus issuing continually from the frontal sinus, are curable in a relatively short time by Gerber's or Onodi's method through the infundibulum. The instrument for this which I warmly recommend is Myles' cutting trochars. The decision as to resorting to this method depends on eareful examination of the case, especially the absence of well-marked pathologic changes of the lining, as shown by absence of the shadow in transillumination.

Further, about 60 to 70 per cent. of all chronic antrum cases can be cured by employing Rhéti-Claoue's method, so nicely described and warmly advocated recently by Dr. Otto Freer. But there remains a large number of cases with degeneration of the lining of the cavity, necrotic floor, the periosteal lining representing such exuberant growths of degenerate polypous and fibrons tissue that the cavity appears like a mass of flesh, the interspaces being filled with cysts or stagnated, putrefied, cheesy and foul-smelling pus. When we have to deal with such a condition we are mistaken in hoping to cure such antrum cases by the intranasal route. We have to resort to a radical operation through the facial wall. If this is necessary there is no reason why Denker's operation should not be chosen, which is simpler and easier to perform than Luc's or Boeninghaus' operation. The safer control of the healing process secures the shortest, easiest and most painless aftertreatment and involves the guarantee of a quick and lasting cure with no possibility of recurrence.

DISCUSSION.

Dr. W. E. Casselberry:—I would like to ask a few questions. First, with reference to the preliminary operation on the inferior turbinate body, would it not be possible to make the resection of the turbinate under the same anesthesia immediately preceding the major operation? It is always more or less embarrassing to need to do two operations instead of one. I have not myself seen the way elear to make the two in one, hence the inquiry of the essayist.

Second, can we, with reasonable certainty, always rely on total freedom from facial deformity equal to the patient shown by Dr. Stolte? I would fear, from the removal of this bony junction of the walls of the antrum, nose and face, some de-

pression at the wing of the nose.

I am, however, favorably impressed with Dr. Stolte's description of Denker's operation. It is certain that we very much desire a more satisfactory operation for chronic empyema of the antrum than we have previously possessed. The Luc operation, carried out exactly as Luc described it, and in its various modifications, is uncertain with respect to possible recurrence of the disease. The operation which has given me the best results is the old open operation, made known to me by Dr. Gilmer, but which I supplement by a large antronasal opening, which is then practically the same that Dr. Coakley described recently. There is one modification of this operation which has given me satisfaction; that is, instead of making the large antronasal opening into the inferior nasal meatus, to make it through the thin part of the wall in the middle meatus, but making it very large, which is then more apt to stay open than an aperture in the inferior meatus. do not believe that it makes much difference with respect to the amount of drainage when it is necessary only to supplement the radical operation and curettage of the antrum, whether the enlarged opening into the nose be at the very bottom of the cavity or not, so long as it is freely large and permanent.

Dr. F. G. Stubbs:—It seems to me, from Dr. Stolte's paper, that we must have our own ideas as to the healing of these cases. I do not believe that they will be as rapid as his case just reported, for it had had a previous operation, and so there was not such a large denuded lining to be reformed. In Denker's paper the three cases reported had only been operated at that time one month, and he states that there was still a mucus secretion present. It does not seem possible that such a large raw surface as is generally made in this operation could be entirely healed in less than three weeks at least. In a recent case of mine, operated by the modified Luc-Caldwell method, and in which the anterior ethmoidal cells were removed, the patient left the city in ten days with the buceal wound entirely healed. The antrum was irrigated for four months, and on discontinuing the washing there was only present a crust each day of the size of the little fingernail, but no discharge. On examining the patient nearly a year after time of

operating, I find only moisture around the frontal duct, so that the probabilities are that the antrum was well in three months at least. I believe that that time will probably approach the actual time required in most eases operated on by the Luc-Caldwell method. Undoubtedly this time will be much shortened by Denker's method, for one can see every part of the antrum and so hasten healing by appropriate measures.

I would say in defense of the Luc-Caldwell operation, after studying it on fifteen or twenty eadavers, that it is possible to thoroughly inspect with the eye all parts of the antrum, providing a sufficient amount of the anterior wall be removed, and so one can curette all diseased tissue. Further, if the nasal wall be removed well forward toward the apertura pyriformis one can see part of the interior from the anterior opening of the nose and the balance with the aid of a small mirror introduced into the naris. Nor will the nasal opening close or narrow by granulation tissue if we preserve the mucous lining of the inferior meatus and use it as a flap to lay down on the floor of the antrum after the bony wall has been thoroughly removed. As the floor of the antrum and of the nose are in most cases on a level, there will be no ridge left for secretions to accumulate behind and the ordinary blowing of the nose will free the antrum as well as the nose.

Boeninghaus, and later Behrens, of New York, have advocated making a larger flap by dissecting out the bone of the lower turbinate and utilizing the tissue of that body for making a larger flap. While I have done this a few times on the cadaver, I imagine that in the live subject, in the presence of free hemorrhage, it would be rather difficult to do this procedure. But I do not regard this as of much advantage, as it is rare that all the lining of the antrum has to be sacrifieed, for generally we find the diseased areas isolated or not the whole thickness of the membrane involved. If the floor is covered the essential need is met and the nasal opening can not contract.

I have done the operation of Denker on the eadaver but onee, but I find it both simplifies and shortens the time of handling the inner wall of the antrum. It only requires a minute or two to elevate the mucous membrane of the inferior meatus and part of the floor of the nose. The chisel can then be rapidly driven back from the lower corner of the apertura along the floor of the nose through the wall of the antrum without fear of lacerating the membrane. It can again be started from the front and a narrow piece cut out of the lower corner of the apertura and then a pair of seissors will easily remove as much as desired of the wall, including the lower turbinate. Denker recommends the removal of the anterior third of the turbinate three or four days previously. The flap of mucous membrane can now be more easily properly placed. In addition to case of operating, the attack on the ethmoids can be more directly done. In ease of aftertreatment this method allows perfect access to all parts of the antrum and hence assures a proper and direct treatment of any hindrances to rapid healing.

The objection Dr. Casselberry made, that a depressed point might later result at the corner of the nose, can not be decided by observing the patient so soon after the operation. While I am inclined to believe that it will not occur, yet personally I would prefer not to have this feature of the operation done on myself until I had seen cases several years after and was sure it had not occurred. Kretschman has suggested leaving a bony edge at the apertura pyriformis to do away with the possibility of the sear drawing in at this angle of the nose. It does not obstruct the view of the antrum much more. Taken all together, I believe that Denker's operation is an advance on the present Luc-Caldwell operation and its modifications.

Dr. Louis Ostrom (Rock Ieland, Ill.):—My experience is limited to twenty-five or thirty operations on the living and about 200 on the dead. In two operations I resected the anterior one-half or two-thirds of the inferior turbinate; then, bringing in the technic of the submucous operation, made a flap of the mucous membrane of the outer wall of the meatus, from the attachment of the inferior turbinate, bringing the anterior incision down to the floor, along the anterior margin of the apertura pyriformis and then half way across the nasal floor. The

posterior incision runs downward and forward across the floor of the nose, obtaining quite a flap, which is loosened completely. Then the ordinary Luc-Caldwell operation is done through the antrum.

Dr. Stolte said that the anterior corner is the troublesome region, that it is practically inaccessible by all operations. It is for this reason that I mention the two operations. I had a gauge made on the plan of an auger, bent so that the center can be grasped firmly, bringing the opposite end down on a line with the edge of the gauge, on the dental principle of transmission in a straight line. This gauge permits of chiscling at an angle of 45 degrees to the face, inside the Luc-Caldwell opening, into the antrum. With this gauge the anterior corner can be absolutely obliterated and the anterior wall of the antrum made perfectly smooth, leaving as much of the margin of the apertura pyriformis as desired. You can then also curette the ethmoidal and sphenoidal cells. Take the flap and by making mattress sutures you can suture through the superior gingival membrane. Then you have mucous membrane lining the anterior wall of the antrum.

The Denker operation is too radical, except in the very severe cases, where the bone is necrosed, but in such it certainly is a marked advance in our technie. I believe in leaving all the bone I can, at least saving the apertura pyriformis.

While in Boston I saw them doing a number of exploratory operations on the frontal sinus, then filling in the sinus with paraffin. The granulations are allowed to force the paraffin out gradually. It is elaimed that this does not leave a scar.

Dr. O. T. Freer:—I wish to again advocate the operation I described in this society last year, and which was referred to by Dr. Stolte in his paper: the removal of a large part of the nasal wall of the antrum intranasally from the lower meatus after resection of the anterior half or two-thirds of the inferior turbinated body. While the method of making an opening in the middle meatus, spoken of by Dr. Casselberry, is a good one for comparatively recent cases of empyema of the maxillary antrum, where a few irrigations will end the matter, it does not offer good drainage for such eases as have become at all inveterate, for the reason that during the greater part of the day the patient is upright and the discharge must, therefore, collect in the antrum until it reaches the level of the opening, and only while he lies down and upon the side of his body opposite to the affected antrum can there be anything like drainage from an opening in the middle meatus. In contrast to this the operation I have described,1 performed with the trephine and burr driven by the dental motor makes a large opening in the nasal wall of the antrum down to the level of the nasal floor, an opening large enough, if need be, for curettage, one which permits inspection and which does not, in my experience, have the tendency to close that Dr. Casselberry refers to. The ablation of so large a portion of the nasal wall not only drains but freely ventilates the antrum, the latter result having an important effect in restoring the pathologically altered mucosa to a normal condition. Zuckerkandl and Zarniko explain the evil effects of the absence of ventilation upon the suppurating mucous membrane of the antrum in the many cases where the natural opening is elosed to the ingress of air by such states as swelling of its lining, polypi, enlargement of the middle turbinal or hyperplastic filling of the hiatus semilunaris. They show that the result of such closure of the outlet of the antrum is absorption of the air contained in its cavity and the consequent placing of its mucosa under suction, that is, negative pressure, such as occurs in the tympanic cavity when absorption of the air contained in it takes place after closure of the Eustachian tube. The result of this rarefaction of the air in the cavity of the antrum is venous congestion and cdema of the mucosa, just as a cupping glass causes the same condition in the skin. Free ventilation of the cavity of the antrum does away with this abnormal partial vacuum, so that edematous and apparently badly degenerated polypoid mueosa may return to a normal state when the negative pressure is relieved and the irritation of stagnant secretion is gone. Of course, the pathologie changes may have become extreme and include caries or

^{1.} Laryngoscope, May, 1905, p. 343. Chicago Med. Recorder, July, 1905. Illinois Med. Journal, July, 1905, p. 557.

necrosis of the bone, and in such cases the more extensive operation of Denker, advocated by Dr. Stolte, is doubtless the best of the radical ones, but such extreme cases are very rare and the vast majority can be eured by the intranasal operation I have described. The more I comploy it the better I like it. It can always be done under cocain anesthesia and the burr alone, without the foreeps, is quite sufficient to enlarge the opening to the desired extent without much pain to the patient. It is surprising how soon suppuration eeases. My patients have becu able to dispense with all washings after a month or six weeks, during which time they use only normal salt solution as a cleansing fluid. There is no difficulty, as I have emphasized, in entering the antrum with a straight trephine and straight burr. The nasal wall may be plainly seen after the resection of the inferior turbinal, which is not done as a preliminary procedure several days before, but is a step of the operation performed immediately before opening the antrum. It is easy to pack the latter with a strip of bismuth lint inserted through the opening made. The only possible objection to the method is the destruction of a part of the mucosa of the nasal wall, so that this eovering would not be available for a Denker operation, but since the indications for the latter are exceedingly rare this is not a matter of moment. My patients can wash out their antra and find the opening after the intranasal operation just as readily as Dr. Stolte's patients can. I have them use large Eustachian catheters for the purpose.

Dr. Stolte (closing the discussion):—With regard to the preliminary removal of the lower turbinate, this could be done in the same sitting as the radical operation, but I prefer to do it four or five days before, because the operation can be done easier with the patient in the sitting position than in the recumbent or dorsal position. By cauterizing the attachment of the turbinate it can be removed with but little hemorrhage, and then when we begin the main operation we have a healed surface, no rough edges to which the tampon can adhere later. The hemorrhage in all these operations is severe, but in this way we can reduce the hemorrhage in the chief operation.

As to the second point, my speedy eure, the healing of the antrum depends on two points: First, that we really removed all the diseased tissue without denuding the bone unnecessarily, at the same time preserving all the healthy lining; thus we can shorten the healing process very much. On the other hand the floor of the antrum, which is chiefly diseased, we curette thoroughly, eovering the denuded bone with a mucous membrane flap. During after-treatment we are able to view the entire cavity and may cauterize any point which is likely to produce sccretion. Thus we can produce a eure in shorter time than we can with the Luc operation. Naturally, there will be still some moisture in these cases after the first two weeks, but there is no pus. Further, an important point during operation is not to lacerate the periosteum of the facial wall, but to detach it very carefully and fix it afterward on the remainder of the gingival-labial fold. The preservation of a resistant outer wall depends on preserving the periosteum. In this case I succeeded very well in doing that, and I see in this success the cause of my speedy cure. I don't believe that we will see in a year or two from now any disfigurement. In two other cases the result is the same as in this case. Of eourse, we must wait for a year or two before we can speak of any final results. The rapid cure also depends on frequent washings of the antrum with normal salt solution, so as not to allow the accumulation of any secretion. This patient did this every two hours.

Dr. J. T. Campbell reported a ease of primary syphilitie infection of the nose.

DISCUSSION.

Dr. W. E. Casselberry:—I have not seen any nasal chancres, but I have seen, in two or three instances, this characteristic fibrinous exudate on the septum and turbinates as a manifestation of secondary syphilis. The exudate was so prom-

inent that nasal diphtheria was suggested at once. It occurs to me that, inasmuch as Dr. Campbell described this initial lesion of chancre as being covered by this exudate, there is here a point in diagnosis which it is necessary to keep in mind.

Dr. Thomas Faith reported a ease of a foreign body in the nose.

A CASE OF RHINOLITH.

THOMAS FAITH.

CHICAGO.

As eases of rhinolith are not common, and as few of them appear in the literature, I have ventured to report the following case with some general remarks upon the condition:

Miss G., aged 17, consulted mc in November, 1905, on account of nasal obstruction, a foul-smelling discharge from the nostrils and almost constant pain in the right side of the head and face. This condition had been present for the last six months. Three months previously she had been examined by a rhinologist and was told that she required a nasal operation, but she declined the proposition. Examination showed the left nasal passage to be clear; the right passage was filled with pus, which, after removal, revealed a fleshy-looking mass, granular in appearance and apparently occupying the posterior half of the inferior and middle meatus. On introducing a probe the mass was found to be firm and unyielding and gave a sensation as of a bony growth covered with soft tissues. Probing caused profuse bleeding. With the rhinoscopic mirror a dirty yellow or grayish mass could be seen projecting into the postnasal space on the right side. The mass was surmounted with granulations. As the patient was very nervous I made an appointment for another examination, at which time I intended removing a portion of the mass for microscopic examination, as I considered it to be a probable sarcoma. Accordingly, two days later, under cocain and adrenalin, I attempted to remove a portion of the mass with a pair of nasal cutting foreeps, and, failing in this, I employed a sharp curette. After removing quite a quantity of granulations and desiceated mucus I encountered a gritty mass and soon determined its true nature. I at once set about trying to remove the stone, but eould only accomplish this after crushing it, which I did with a firm pair of curved foreeps. The stone was of a dirty gray color and had for its nucleus a pearl button five-eighths of an ineh in diameter, which the mother later remembered had been introduced by the child when about two years of age. The weight of the entire stone was about 100 grains, including the button. With the exception of a slight decrease in the size of the inferior turbinal posteriorly, there was no structural damage done to the nose. The nasal floor and walls were freed from granulations with the curette and dusted with nosophen; the discharge and odor at once subsided and the recovery was uneventful.

There are several points of interest in connection with this case. First, the length of time the foreign mass was present (about fifteen years) without giving rise to symptoms; second, the lack of structural changes, resulting from its long sojourn in the nose; third, the way in which the true nature of the mass was hidden from view and from detection with the probe, by the abundant granulations and the layer of desiceated mucus with which it was covered; fourth, the extremely fetid odor of the discharge, which reminded me very much of the odor sometimes emitted from a malignanat growth, and which, no doubt, was due principally to the decomposing epithelial débris from the nasal mucosa, as there was no bone necrosis at any point.

Rhinoliths, we know, are collections of calcareous material which have usually formed around some foreign body, a piece of carious bone, a fragment of inspissated mucus, or a fragment of clotted blood, which has remained in the masal passages for a considerable period. If a foreign body acts as the nucleus, it may have been introduced through the anterior nares by the patient; it may have been forced through the posterior nares during vomiting or choking, or it may have penetrated the tissues, as in the case of lead bullets or particles of stone or metal during an explosion. If a fragment of carious bone, it may be a sequestrum

from the septum, turbinal, or outer nasal wall; as these loose pieces of bone are occasionally found in the nasal passages. Sometimes rhinoliths are found to contain a cavity instead of a nucleus. They are usually found in adults, though they are occasionally present in comparatively young children; and may vary in weight from a few grains to several hundred grains. They have been known to have remained in position for thirty or more years.

The symptoms of rhinolith, in general, may vary from a slight one-sided discharge to grave structural changes. Fetid discharge, hemorrhage, and obstruction to breathing are symptoms common to most cases. Deviation of the septum to the opposite side, and distortion, with prominence of the malar bone, have been observed by Baber, and Knight mentions perforation of the palate, with facial paralysis, as having occurred. Disturbances of smell, tubal and middle ear discases are sometimes occasioned by these obstructions. Seiler says that they have been observed in both nostrils at the same time, and that they occasionally penetrate the soft tissues and become covered with mucous membrane.

The diagnosis of rhinolith may be very easy or may be difficult, depending somewhat upon the size, position, and the secondary changes which it may have occasioned. The conditions with which it is most likely to be confounded are earies, malignant growth, and osteoma. Thorough washing of the nares and the careful use of the probe will usually reveal the nature of the mass, if the granulations have been removed; and, in the probing, the physician will be somewhat aided, I believe, if the probe is used posteriorly, i. e., through the pharynx, as well as anteriorly. Also the use of a sharp-pointed probe will be found of service as it will penetrate the granulations, mucous membrane, or desiceated mucus which may hide the stone and its gritty feel.

DISCUSSION.

Dr. W. E. Casselberry:—I would like to call attention to a point in diagnosis. A foreign body in a nostril is apt, in time, to produce suppuration, while a unilateral purulent discharge of a chronic nature is also an indication of sinus suppuration. One should, therefore, keep both possibilities in mind, whenever attention is drawn to a nasal secretion more or less foul and purulent which issues chiefly from the nostril.

Dr. O. J. Stein:—Quite recently I removed a foreign body from the nose. With bone forceps I liberated it from its bed, which was at the junction of the posterior with the middle third of the inferior turbinal on the right side. It is black in color and has the appearance of a piece of coke and had been in the nose for ten years. The only symptom was a bloody serous discharge. There was no pus, no pain, no excoriation about the nostril. The patient has no knowledge of introducing a foreign body into the nose.

Dr. F. G. Stubbs:—About six years ago I saw a man who had been held up and shot. A revolver bullet entered the cheek but was not found at the time. Six months afterward the man had pain and came to my clinic at St. Luke's Hospital Dispensary for examination. I found the bullet projecting into the inferior meatus. I extracted the bullet easily with a pair of forceps. The man had noticed a discharge from his nose for only about a month before I saw him.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

The annual meeting and banquet was held at the Chicago Athletic Club Jan. 9, 1906, J. E. Colburn presiding. The annual report of the Secretary-Treasurer showed a balance of \$62.40 on hand, with resident membership of fifty-four and non-resident membership of twenty-eight.

The following officers were elected for the ensuing year: Dr. George Fiske, president; Dr. Thos. A. Woodruff, vice-president; Dr. E. V. L. Brown, secretary; Dr. W. H. Wilder, councilor; Dr. J. E. Colburn, member of the executive committee.

Dr. Thomas Faith, Secretary.

CHICAGO NEUROLOGICAL SOCIETY.

A regular meeting of the Chicago Neurological Society was held October 26, with the President, Dr. Harold N. Moyer, in the chair. Dr. Julius Grinker demonstrated a case of Brown-Séquard paralysis.

Dr. Henry Gradle presented a case with the tentative diagnosis of serous meningitis, of which he said: The patient came from a family that is fairly healthy, no serious sickness in childhood, except repeated attacks of chorea. At the age of 15, in October, 1900, he had a febrile attack, with stupor, convulsions, head retracted, headache; stupor leaving gradually, but sick from the middle of October until late in December, when the sight began to fail, and late in December all had gone. He was treated with iodid potassium, presumably, and, as he claims, without improvement. He came to my care in 1902, practically two years after his first attack. The general health was, on the whole, good, though not quite perfect. He was strong, could get about well, never sick except an occasional slight attack of tonsillitis, but a numb feeling in the head, tension in the nerves, as he expresses it, "a something in the middle of the head," but no pronounced mental involvement. He presented atrophy of both optic nerves-not clear whether post-neuritic or not. It looked more like pressure atrophy. Vision was better than 1/10 in each eye, the field contracted to about half and in each meridian concentrically contracted. Under iodid of potassium and strychnia in large doses he improved unquestionably. His vision was reduced to 20/60 in one and 20/80 in the other eye. The field has never contracted, but increased a trifle. The vision remained the same for about two years, and then began to fail a little bit. He was given strychnin subcutaneously, according to Gowers' suggestion, with questionable improvement. The question of suppuration occurred to me for this reason; at first examination he gave no history of a nasal condition, but on iodid of potassium in large quantities he got profuse nasal suppuration. There is no sinus disease, no headache, no indication for operation, and without operative interference one can not locate the sphenoid in a fairly narrow nose. There is no trace of pus under douching, and there will be periods when there is none, but every time he uses iodid freely he gets the free suppuration on both sides of the nose.

The objective examination has never given any decided result. In August of the present year an attack occurred similar to the first, but not so severe. He was disinclined to get up, with staggering dizziness, pain in head and back, and irritability. There has been some little rise of temperature, 100.5, 99.5, or a little over, but occasionally a normal condition. He has improved pretty steadily since the latter part of August.

Dr. Patrick asked if the pressure symptom had changed.

Dr. Gradle:—Never any neuritis visible; never any vascular change in the eye. The atrophy is more pronounced this year than previously, and while the vision sank a trifle early this year and even now is less than in the spring, it is still about 1/10 in either eye. The nerves are paler than they were. He is not entirely over his attack; a day or two ago he had a temperature of about 100; he is still depressed, but brighter mentally than he was. He can enjoy talking and being read to and can walk fairly well. During this condition Dr. Grinker made an examination. The condition is one of increased intra-eranial pressure, probably never totally absent in these past years, and pronounced during the present attack, with a low fever. On the whole, it seems these symptoms fit best into Quincke's description of serous meningitis. Quite a number have ended in recovery, and the anatomical diagnosis is not difficult. The largest portion of the material is probably furnished by the otologists who see frequently a condition which is the result of increased intra-cranial pressure, and sometimes with pronounced symptoms like paresis, paralysis and sensory disturbances, etc., and when there is no other lesion recovery is the rule after the suppurating focus in the mastoid bone was removed. Where done in vivo, there is always a large escape of suppurative matter. There is sometimes evidence of epidural abscess and brain abscess, which is complicated by a serous meningitis, but in the individnal case the diagnosis is indefinite. It has varied between serous meningitis and brain tumor. Here the long interval of comparative immunity almost excludes the possibility of tumor.

Dr. Sanger Brown:—Would you not think it well to make a lumbar puncture in a suspicious ease like that?

Dr. Gradle:—The symptoms are not so serious as to warrant us in undertaking this step, which I am not sure is free from danger.

Dr. Patrick:—It would be dangerous to do a lumbar puncture in such a case, particularly where there was increased intercranial pressure; the lumbar puncture would be decidedly dangerons, because the probability is the medulla is pushed down further than it should come, and relieving the tension from below would allow it to be pushed further down. I agree with the eaution of Cushing that in such cases where justifiable, to puncture to take off the pressure, but an exceedingly small amount of fluid should be allowed to escape. To puncture and allow the free escape of fluid is decidedly dangerous.

Dr. Hecht:—In Berlin they have discarded it entirely and it has fallen into disrepute in diagnosis work because of the lymphocytosis, as well as the albuminosis. Is there any history of acute infection, such as influenza or grippe?

Dr. Gradle:—No; the attack was supposed to be typhoid, but the history speaks against it. The stupor came on quickly, almost suddenly.

Dr. Grinker:-Through the kindness of Dr. Gradle I examined this ease very carefully and tried to find some positive diagnosis. The diagnosis of scrous meningitis is always made by exclusion. We have been unable to find in the history or examination anything which would indicate this to be an organic nervous lesion, such as multiple sclerosis or brain tumor. While in Vienna I saw two eases in which such a diagnosis had been made, and I saw the acute attack, whereas here there is only a history of such attack. The attack was somewhat of a stupor, with slight retrogradation of the head, headache, and a very slight elevation of temperature, 99.5-100. In the absence of any other symptoms the diagnosis of serous meningitis was made; the patient made a complete recovery in six or seven weeks. The other case was not watched over a prolonged period and there was no knowledge of recurrence of the symptoms. Quineke divides these into the acute, the chronie, and the paroxysmal. There is a period of slight illness, the patient almost recovers, or entirely so, until a few months or years later a similar series of symptoms develops. He ascribes this to an accumulation of serum, which in the course of time is being absorbed, and with the absorption of the fluid the symptoms vanish; as the serum accumulates again we have an attack of the symptoms, which may be so illy defined that one would not know what to eall them, but all suggest meningitis.

Dr. D. O. Heeht read extracts from a paper on "Dementia Præeox," which comprehended an historical review, a discussion of the symptomatology in general as well as the subgroups and special forms. Reference was made to the pathology and differential diagnosis, and in eonelusion the essayist dealt with the controversial character of discussions entered into by the contemporary alienists of France, Germany, England and America concerning the Kraepelinian doctrine applied to this psychosis. A summary of the paper, which appears in full in the November and December issues of the Journal of Nervous and Mental Diseases, 1905, is as follows: 1. That Heinroth, in 1818, hinted at various forms of dementia, and in one of these perhaps anticipated later descriptions of dementia præcox. 2. From the time of Esquirol, 1838, to Rousseau, 1857, French labors in . this field ceased, but were renewed from 1860 to 1886 with vigor by Morel, Legrand du Saulle, Falret, Legrain, who aimed to correlate arrested development with the pubescent age and emphasized the mode of onset. 3. The English school of psychiatrists, led by Tuke and Clouston, added the weight of their authority by teaching that the essential nature of adolescent mental disease lay in the "tendency to dementia from the very beginning." 4. German interest was awakened in 1871 by Hecker, who, it is believed, employed for the first time the term hebephrenia

and defined its scope quite as accurately as it is at present construed. 5. Following the footsteps of Hecker, Kahlbaum by subtle analysis evolved a milder abortive, curable type, which he chose to call heboidophrenia. 6. The subsequent writings from 1883 to 1903 of Neisser, Pick, Greisinger, Somer, Krafft-Ebing, Wernicke and Diem have materially advanced the knowledge and study of adolescent insanity. 7. That Kraepelin, recognizing the imminent need of clarifying all thought upon the subject, set himself to the Herculean task of classifying anew and submitted for the first time, under a title not wholly new, a series of disease pictures in group form, all of which had in common a termination in a special kind of mental weakness. The title was that of dementia præcox. The classification was a radical step in advance of anything hitherto accomplished. In the fourth edition the psychoses were arranged in three groups: (a) dementia præcox (Hecker's hopephronia), (b) katatonia, (c) dementia paranoidos. In the seventh edition (the last) no mention is made of degenerative psychoses; the general designation of the chapter in dementia præcox and the three (a) hebephrenia, (b) katatonia, (c) dementia paranoides. 8. Kraepelin's definition and general symptomatology are briefly considered, some of the important phenomena receiving proper emphasis by way of case references. 9. The three groups fashioned by Kraepelin are separately discussed with the attached short case reports. 10. Pathologic research done by Alzhermer, Nissl, Voison, Ballet, Kiernan, Hoch, Meyer, has given little more than an insight into the structural changes that underlie the diseases, but the changes noted are sufficiently suggestive to stimulate to still keener investigation. 11. The optimism concerning curability in any instance should be held in check. Most authors agree that the prognosis is even better in the katatonic form than the hebephrenic and most unpromising in the paranoid. A large material and very long interval of freedom from symptoms is necessary to govern the ultimate dictum as to prognosis. 12. In the differentiation of dementia præcox from circular insanity, paranoia and general paresis, signal symptoms, such as memory loss, the judgment, negativism, verbigeration, manner of speech, character of the delusions and hallucinations, the ties and katatonic symptoms must be carefully weighed, since some of them may be manifest in all forms of insanity. 13. Diem's dementia simplex is deserving of note, since it differs from all the aforementioned types by virtue of the following characterization: An onset without prodromes, insidious, without exacerbations or remissions, without maniacal or melancholie moods, without insane hallucinations or delusions, without tics, stereotypy, negativism or cataleptic and katatonic phenomena.

Dr. Patrick: -I would like to allude to two forms of what seems to me should be classified as dementia præcox: First, the simple dementia præcox, which I think should properly be so called, and to be included in it a dementia grafted upon an individual who has never been entirely normal mentally; that is, a somewhat behind-hand individual; the high-grade imbecile, not quite up to normal in a mental way, who goes on gradually developing and improving, acquiring greater intellectual capacity, but never developing up to the normal, until at some time in his career he begins rapidly to fail and show the ordinary symptoms of dementia præcox. I have seen a few such cases and have not known any way to classify them except to assume it is an ordinary dementia præcox occurring in a defective individual. So far as I know, this particular kind has not been much written about. It should be recognized and the cases differentiated from the various vagaries and outbreaks likely to occur in defective individuals. The simpler form is oftener seen in private practice than in public. Practitioners see such young people who are giving annoyance to their parents and friends, but are not bad enough to be sent to an asylum. These cases are not so very rare.

Dr. L. Harrison Mettler:—We are all familiar with the enormous amount of discussion which dementia præcox, like paranoia, has provoked and with the different views that are offtimes diametrically opposed. This very discussion of the subject indicates the weakness in much of our modern psychiatry, and Kraepelin has even more forcibly indicated the weakness in adopting a classification based largely upon the course and prognosis of the respective diseases. I believe

the method is an erroncous one and in following it we are traveling along a wrong road. I do not deny the popularity of the method. It is in line with all the earlier and more primitive methods of studying disease wherein the symptomatology alone is taken as the essence of the disease and no attempt made to correlate the mere symptoms with a pathologic basis as the only and true essence of the disease. It is the clinical method, popular because so obvious in its presentations, but with all its instability and inadequacy when contrasted with the pathologic method. In spite of the fact that clinically we are started upon the diagnosis of a disease by a close observation of its symptoms, course and termination, the disease itself which we are diagnosing is not the symptomatology, but the histopathologic changes upon which that symptomatology depends. The distinction is an important one and indicates the reason for the opposition of Wernicke to Kraepelin.

Leaning upon normal psychology and upon cerebral physiology and localization, Wernicke has attempted an explanation of psychiatry upon a known cerebral basis. Physiologic and pathologic psychology are brought into line with our knowledge of brain functions. In spite of the fact that much is still unknown in regard to the cerebral functions, and in spite of the fact that we might not agree with Wernicke in some things, as, for example, his correlation of all psychic activity with the speech function, I am convinced that his method is the only truly scientific one. It is the one in which our best efforts should be employed in the attempt to solve the problems of psychiatry. We should study closely normal psychology and correlate the observations made with the physiologic functions and changes of the brain. With this basis to work from, we should study abnormal psychology or insanity and correlate its observations with abnormal cerebral physiology or cerebral pathology. By the Kraepelin method we are studying the psychoses rather from their end-products; by the Wernicke method we are studying them from their very essence. The wherefore of a certain set of psychic manifestations is clearly more important to know than the course and mode of termination of those manifestations. In the method which he has adopted, Kraepelin has accomplished much more, perhaps, than any of his predecessors. The instability of the method, however, will practically guarantee always an interminable discussion of whatever is founded upon it. In the physio-pathologie method which Wernicke has adopted, though at the present moment the relative paucity of positive data is glaring enough, the method itself, based as it is upon a study of the essential nature of the disease itself, will gradually lead to a diminution instead of an augmentation of psychiatric discussion.

Dr. Sanger Brown:-I have been very much interested in the paper. I have been a long time trying to find out just what dementia præcox was, and when Dr. Hecht stated it was the purpose of his paper to inform us what it was, and then said that his paper was so long that he could not read that part of it, I was disappointed. From what I can gather from the literature and the discussions on the subject I think that Kraepelin, who set the discussion going, was a very enthusiastic student and had been carried away somewhat in his enthusiasm. He has been so intent on carrying out and following his ideas, which he has done cleverly, that he has led us astray. I infer from Dr. Hecht's paper and from Kraepelin's later remarks that he appreciates that himself. He does not claim now to have discovered a new disease, and I do not believe he ever meant to claim he had, but a great many of his readers and people who study his writings have some way been under the impression that he was making such elaim. I do not believe, in fact, that Kraepelin discovered dementia præcox any more than Marie discovered hereditary cerebellar ataxia. He took out some well-known symptoms and gave them a name. The discussion he has provoked has done good, but when this has been reviewed by practical alienists, men who spend their lives in close contact with the insane in various phases and follow the cases through, who in the wards of institutions of their own have had years of impression and study and have been able to make their own conclusions and prognostications, they have not indorsed Kraepelin's dictum.

Dr. Sydney Kuh: -One point may be worthy of mention in discussion of the

differential diagnosis of dementia præcox from the eircular forms of insanity—the depressed condition. The depression in dementia præcox is decidedly different from that in the maniacal stage of circular psychoses. They are atypical cases. In any case of mental depression occurring in a young individual in which the symptoms were not typically those of the maniacal form, I would feel that it was a case of dementia præcox. As for Dr. Mettler's suggestion as to a sounder basis for classification, we shall not be able to have what he asks at the present stage, and for many years to come, probably. Unfortunately, physiologic psychology has not given us, and will not for a long time, the necessary data which would enable us to build up a pathologic psychology on that basis. Any one who has worked at all along this line must realize what an incredible number of experiments will have to be made and how tremendous the difficulties are in the way of getting sound facts, and we certainly will never see the time when it can form the basis of classification.

Dr. Grinker said that the paper was a most admirable one and served to emphasize the fact that there was constant change going on in medical thought and nomenclature. Some time ago a case was examined at his clinic and set down as a typical melaneholia attonita. A year later the patient presented himself, much better, and was classified by all the department as a circular insanity. Still two years later and the boy was classified as dementia præcox. Dr. Grinker did not feel sure that the present classification would stand the test of time.

Dr. Moyer:—When I began to practice in an insane asylum, the classification was at first based upon causation. Then we drifted into the special forms, where we had a name for every aberration, pyromania, cleptomania, and a name was devised for every particular bent of an individual patient. Then came along the volcanic eruption of Spitzen on one hand and Gray on the other, at that time, in fitting the idea to the monomanias and classifying them under paranoia. Later we added to that the hebephrenia, and now we are asked to group the hebephrenias and catatonias and all forms of early dementia into one grand group of dementia præcox. You see the tendency has been to first broaden the classification, then to narrow it, again to broaden and again to narrow it—two broadenings and two narrowings in an experience of about twenty-five years. Now in this dementia præcox to include the paranoias and the catatonias and hebephrenias is a mistake. They are well-marked and valuable clinical entities and they are useful in a classification. The dementia simplex is a good thing, the one really sound addition that the whole discussion adds to the value of our present classification.

CRAWFORD COUNTY.

The regular bi-monthly meeting of the Crawford County Medical Society was held at the First Presbyterian Church in Robinson, March 8, 1906. There were present at this meeting, which was open to the public, about twenty physicians and over 200 of the representative men and women of the community, including every minister of the city, editors, lawyers, the Board of Education and the superintendent, teachers and advanced pupils of the public schools. The president, Dr. Dunham, opened the meeting by stating that this was a meeting for the benefit of the people and that they would make it the more interesting in proportion as they participated in the discussion. The secretary read a short sketch, further explaining the purpose of the meeting and dwelling on the advantages of medical organization, both to the physicians and the people of any community.

The regular program consisted of a symposium on consumption, as follows:

HOW DO WE GET CONSUMPTION, AND HOW IS IT RECOGNIZED EARLY?

Dr. J. A. IKEMIRE,

PALESTINE.

In the study of disease it is necessary, for a thorough understanding of the morbid condition and rational treatment, to have as clear and accurate a knowledge of the cause of the deranged function as possible.

Of no disease is this more true than of consumption—the most formidable of all diseases, as is shown by the fact that one-seventh of all deaths are caused by it. Man is not the only animal that suffers from this disorder. It also attacks animals, from which it is quite possible for us to contract the disease. Against this danger the government has taken decided steps in the form of meat inspectors at all the great packing houses.

The cold-blooded animals are infrequently affected, but a few have shown by decided symptoms that they were tuberculous. Of the domestic animals, the cow is perhaps the most frequently affected. Some authorities place the number of tubercular cattle at 15 per cent. As this animal furnishes us food in the form of milk and meat, it is quite possible for us to contract consumption from it. Sheep are not often attacked, but there are a few cases on record. The pig quite frequently has consumption, but not so often as the cow. Horses, cats and dogs do not often take the disease. Of the semi-domestic animals, the guinea-pig and the rabbit are quite susceptible. These animals are frequently used for experimentation and as a means by which we may be able to find the disease in man.

All races of men do not show the same degree of susceptibility. The Indian is very prone to consumption. The negro, in his native country, does not show any marked degree of susceptibility, but when he is brought to this country he frequently contracts the disease in its most virulent form. The Irish show a great susceptibility, but the Hebrew is comparatively free from consumption. No climate or country is free from this scourge. The altitude plays a certain rôle. The higher the altitude the more free it is from consumption. By many authorities, low, wet regions are considered more infectious than dry. One thing is certain: the germ which is the cause of the disease grows and remains alive longer in damp, dark places, especially in those away from sunlight. It is more frequently encountered in tenements and overcrowded parts of cities than in the country.

The specific cause of consumption is the bacillus tuberculosis, discovered by Koch. In length this germ is about one-half the width of a red-blood corpusele, or one-seven-thousandth of an inch; that is, if 7,000 of them were laid end to end they would extend but one inch. They are rod-like in shape, sometimes slightly bent. They are comparatively short-lived, especially when exposed to sunlight. They have been found in the room of a consumptive six weeks after the removal of the patient. The bacillus takes the aniline dyes slowly, but retains them, even though treated with acid, thus differentiating it from other germs, except the bacillus of leprosy, which disease may readily be recognized by its physical characteristics. It is of slow growth, developing best on blood serum and the potato, although it is possible for it to be grown on other artificial culture media. The bacillus is found in any part of the body which has been attacked by consumption. The more rapid the course of the disease the more germs will be found, as a rule. The bacillus from sputum seems to be more virulent than from any other part of the body. The lungs and the glands situated near the lungs are the most frequently attacked, because they are most exposed. In childhood the bones and joints are often the seat of the disease. Consumption is frequently found in the intestines, liver, spleen and other internal organs. In fact, no organ of the body is immune from attack.

Outside the body the bacillus is most frequently found in the dust of places occupied by consumptives or the apartments in which the patient lives. Factories, homes, hospital wards, schoolrooms, offices, churches, etc., in fact any place where many persons are allowed to expectorate on the floor, which is not properly cleaned, are the places where the germ is most prone to lurk. Of course, the bacillus may be found in one of the animals above referred to. The bacteria may be transmitted to the human body by milk from a tuberculous cow or by the individual eating infected beef or pork. The bacillus may enter the body through the skin, as in those who handle hides or infected food material and thus produce a local tuberculosis at the point of entrance. Most frequently it is contracted by persons very intimately associated with consumptive patients who do not take the proper precautions regarding their habits in relation to those around them.

The germs do not, as was for a long time thought, inhabit all the air of a room, but are confined to a comparatively small area around the patient.

It is a well-known fact that predisposition is an important factor in the causation of disease. In tuberculosis it is well marked. We have an inherited predisposition and an acquired predisposition. By inherited predisposition we mean a weakness of the person transmitted by one or both of the parents. Most frequently it is received from the mother who is suffering from consumption. The poisons generated by the bacilli in the body of the mother are earried by the blood through the placenta, and here the poison can pass to the fetal blood by osmosis. In the body of the fetus it produces the same weakness found in the At birth the child is weak and anemic and frequently perishes from some of the acute diseases of childhood, if it does not contract consumption in its infancy.

In the acquired form, predisposition is caused by agencies outside the individual and independent of both parents. Many diseases produce a weakness in the body which, if the patient is exposed to infection from consumption, frequently tends to increase the probability of his contracting it. Among these may be mentioned measles, whooping-cough and searlet fever of early childhood and diabetes and malaria of adult life. These are only causes in so far as they lower the vitality and interfere with the nourishment of the patient. Insanity is said to predispose to consumption, but when we consider the life of many in the asylum we must conclude that it is due, in a great measure, to the fact that persons are more exposed in such places, and of necessity institutions show a greater percentage of consumptive patients. Injury is an element quite frequently conducing to the development of consumption. In acquired predisposition the social conditions must be taken into consideration. In places where many persons are crowded together in dark, damp, insanitary quarters we may expect to find many cases of consumption. Persons of sedentary habits who do not get out in the air and sunshine furnish a large proportion of victims to this disease. This is true not only of persons who work at desks as clerks or secretaries, but also of persons engaged in any ealling that requires the individual to be in a sitting posture most of the time and allows no time or chance to breathe good pure air, the individual being, in many instances, surrounded by tuberculous subjects, who throw out countless millions of germs by the filthy habit of spitting on the floor. The sputum dries and is carried, together with the bacilli it contains, in the form of dust to other persons who may be readily infected with the germ.

Heredity has for a long time been considered as one of the greatest factors in the causation of consumption. But in later years extensive experiments and observation by some of the best scientists of the world seem to prove that it is not so important a cause as infection. There are but three possible avenues through which consumption may be contracted by heredity, and through these three possible ways it seems of rather infrequent occurrence. Suffice it to say that heredity, although it is of some importance, does not demand our attention so much as infection. Many eases in early life are attributed to heredity when if the local condition and environments of the patient are studied it is found to be due to infection from parents or other tuberculous members of the family.

We now come to the most important element in the causation of consumption, viz., infection. By this is meant the process and conditions which allow the germs to be transmitted to and to grow in the body after birth. It is self-evident that so long as the individual remains free from germs, so long will he be free from the disease. It was thought in the past that the bacillus which causes consumption was to be found in all the air. That is, we all of us breathe into our lungs many germs with each breath, and the reason we do not contract the disease is that the vital forces of the body are not lowered sufficiently to allow the growth of the germs. But recent observations and experiments have proven that the germ does not exist universally in the air, but only in the immediate neighborhood of consumptives and in the dust of dwellings and rooms occupied by consumptives. Patients breathe very few germs into the air. Not many are thrown out by coughing. The greatest number are expelled by means of the sputum. There is not much danger if the sputum is properly sterilized or disinfected. In other words, a consumptive patient is no menace, or, at least, not much, if he properly takes care of himself. Thus the patient, in a great measure, controls the danger of the disease to others around him.

If he be a laborer he spends much of his time away from home at his employment, so he does not run so great a danger of infecting members of his family. But if his place of work is not properly taken care of he is a source of danger to his fellow laborers. A tuberculous child, attending school in a schoolroom where there are no provisions made to prevent contagion, will endanger the lives of his schoolmates, especially those who sit in his immediate vicinity during school hours. In the family where a consumptive lives, the members of the family who nurse the patient are in danger. Very frequently we see an individual who has taken care of a consumptive person develop the disease and pass to a fatal termination, while those of the same family who have not been intimately associated with the patient have remained strong and robust. Many cases are on record which prove this almost beyond a doubt.

Consumption is quite frequently transmitted by marriage. It is often seen where one of the contracting parties is tuberculous and dies a short time after marriage the other rapidly develops consumption. This, together with other conditions, has led legislatures to consider the advisability of not allowing a marriage to take place unless both parties are pronounced in good health by a physician. As mentioned above, factories and workshops show a marked percentage in the death rate from consumption. This is due mostly to the habit of the employés of expectorating on the floor. The sputum soon dries. The floors are generally cleaned by sweeping instead of mopping, which disseminates the bacilli throughout the room. In a busy workshop the movements of the employés will scatter the germs more and more as the day goes on.

Among the most fertile sources of contagion are the overcrowding and the insanitary conditions found in tenement districts. Wherever the amount of air and sunlight for an individual is diminished there are favorable conditions for the development of tuberculosis. Not only do these conditions give a chance for the bacilli to enter the body, but it prepares a reception for it by lowering the nutrition of the body. This is shown to be true by the statistics of any prison that is overcrowded, while those which allow sufficient air and sunlight per individual do not show marked increase in the percentage of tuberculous subjects. Nurses in general hospitals do not show a marked increase in the number afflicted. But among those who are employed in institutions given over solely to the treatment of consumption the number contracting the disease is greater.

Physicians are not frequently the subject of the affliction, as they are in the patients' presence but a short time each day, and then at a time when the patient and his surroundings are the cleanest. The disease decreases in frequency from birth to the fifth year of age. Then it gradually increases as age advances up to sixty or seventy years. From birth up to the fifth year the child is very intimately associated with its parents, so if they or either of them are tuberculous the child is more exposed.

From the fifth to the tenth year the child is out in the air and sunshine at play much of the time. They do not come in contact with the disease so much and thus do not show so high a percentage of mortality. From twenty years on they are out in the world, engaged in various employments and social functions, and are thus necessarily more exposed to contagion. This is shown to be true by the gradually increasing mortality from this disease as age advances. Sex seems to play a certain rôle. From birth to about fifteen years of age the female is more afflicted, because she lives indoors more and thus comes in contact with more tubercular subjects and their abodes than her brother, who is out in the air and sunshine at work or play. But from twenty years on the male shows more deaths, because then he comes in contact with fellow laborers and employés in the various avocations of life, thus giving him a greater chance to contract the disease. Thus it is seen by actual experiment that infection is the cause of more

people contracting consumption than either heredity or predisposition. All three frequently work together, as do most causes of disease.

When the public comes to learn, and the owners of factories, etc., are made to know how to prevent the infection with the germs of the "great white plague," then we may reasonably hope that the death rate will be materially decreased. In no disease is it so important to recognize the condition in its inception as in consumption. For treatment to be most effective it must be applied in the very earliest stages of the disease.

The first step is to secure the best possible history of the patient. This does not mean simply to find if there is consumption in the family or if some of the patient's relatives have died of consumption, but the exact time of their deaths and if the patient was much associated with them. The condition of the home must be learned if possible. The conditions existing where the patient is employed should be carefully studied. In this way we may understand the general condition of our patient better and may often be able to advise changes which will do the patient and his family much good. The disease does not always begin in the same way. Sometimes the patient does not completely recover from an attack of acute bronchitis, pneumonia or some other acute discase, but continues to have a persistent rise of temperature, which is more marked in the afternoon. There is not the same degree of temperature each day, but still a slight rise. The patient does not gain strength, and if thoroughly examined will be found to have contracted tuberculosis. The persistent afternoon fever is a sign of great importance and should excite our suspicion to the extent of making immediately a careful examination of the patient. With this condition is found in most cases a persistent hacking cough, usually worse in the morning. Oftentimes it is but a continual clearing of the throat. This cough resists treatment and seems to grow progressively worse. Loss of weight and strength should also be carefully considered and should lead to a very complete examination. Frequently the first serious sign is a copious hemorrhage from the lungs. Whenever we have a hemorrhage from the lungs it should be the duty of every physician in charge of such a case to immediately investigate the condition thoroughly. Physical signs should be very carefully studied. Though the apiees of the lungs are most always the seat of the disease, yet it is necessary to examine the entire lungs and, in fact, the whole body. One of the earliest symptoms is a prolonged expiratory sound. In the beginning of consumption one almost always finds dullness, diminished respiratory murmur, bronchial breathing and râles in the apices. The expansion of the chest is early compromised, so that if actual measurement is instituted it is found that the expansion is deficient on the affected side.

The most important is the finding of the bacilli in the sputum. This examination can be easily made and should be practiced more than it is. When the germs are found it is conclusive evidence that the patient is suffering from consumption. But not finding the germs does not exclude the disease. Often they are not in the sputum in the beginning of the disease, for no tubercle may yet have broken down, liberating the bacilli. But where patients show other indications of the disease the sputum should be examined many times and studied very carefully, for if the patient is suffering from consumption the bacilli will appear in the sputum. To show the importance of this step, it might be well to say that the State Board of Health now furnishes receptacles for the sputum and examines it free of charge, returning the results to the attending physician. In doubtful eases the sputum may be injected in the body of a guinea-pig or rabbit, and if after a certain time the animal is found to be suffering from consumption it is conclusive evidence that the patient has the disease. This is practiced mostly in hospitals and places where the material may be kept continually on hand.

Oftentimes consumption is detected by the tuberculin test. This is done by injecting the tuberculin made by Robert Koch, the discoverer of the bacilli. If after eight or twelve hours the patient does not react to the test by showing a rise of temperature, pain in head and back and general malaise, it may confidently be said that consumption does not exist in the individual. But people should be more careful and have a more thorough knowledge of the earliest symptoms of

consumption. They should be shown the necessity of an early recognition of the disease in order that treatment may do its maximum amount of good. They should not wait through ignorance until the period of effectual treatment has passed.

MANAGEMENT OF CONSUMPTION.

Dr. I. L. FIREBAUGH.

"In the beginning darkness enveloped the earth, when the spirit of God moved upon the face thereof and said, Let there be light, and there was light, and God

saw that light was good."

Early in my professional career, while groping in the fog, mists and superstitions that have clung to me, more or less, all through my life, but were especially dense in my early manhood, I heard a voice as one calling from afar, asking what I most desired. I answered, "Light." What I and the profession need today is more light, and what the people ought to want on the subject of consump-

tion is a great deal more light.

Tuberculosis was born in the cave, with our first parents, soon after the difficulty in the garden, and its course may be traced through the centuries in an ever-widening stream from that time to the present. Like the poor, it is ever with us, but it is not always of the poor, for it affects high and low alike and may attack any part of the body. Only he who loves the sunshine, who fears not the storm and who sees no terror in drafts and night air is free from danger from its infection. Paul Jones of the United States Navy, Robert Louis Stevenson, Schiller, Lawrence Stern, Paul Lawrence Dunbar, John Keats, Sidney Lanier and Artemus Ward in literature; Bichat and Laennec in medicine, and Spinoza in philosophy are only a few of the great who have perished from this disease in the prime of life. It is widespread, stealthy and deadly. It soothes the victim with hope, while it saps his vitality, and, like interest on borrowed money, it never sleeps. One-seventh of all who die perish from this disease alone. The germ is a plant and not an animal. It is not an inherited disease. Children of tuberculous parents may inherit a predisposition or tendency thereto, but they do not inherit the germ. It is a contagious diseasc. It is a preventable disease and it is a curable disease. A boy eats an apple, casts the core aside and it falls on fertile soil. The seed germinates and a tree is produced. A tuberculous subject spits upon the sidewalk, or in the house on the carpet, or any place where it may dry, be ground to dust and blown by the wind. It is drawn into the lungs of some passerby who is not immune, and we have another case of consumption.

Infection usually takes place in one of three ways: through uncooked food, through a wound in the skin and through the lungs, as shown above, which is by far the most common mode. It may also be contracted through kissing and through public drinking cups. The pipe of peace may be the pipe of tuberculosis also. One tuberculous subject may infect a half dozen or any number of the congregation of a church through the use of the communion cup at one sitting.

Handshaking may convey the disease.

How is it preventable? By educating the people. First, it is always infection—sepsis, if you please. The seed must be sown. Teach the people the gospel of sunlight, sunshine and fresh air, both night and day, for the germ loves darkness and stagnation. Teach the people the gospel of sobriety, for the use of alcohol weakens resistance and renders them an easy prey. Teach every one the gospel of absolute cleanliness as understood by the surgeon, absolute asepsis wherever it can be had. Then there can be no infection. Teach the consumptive the golden rule, that he may not convey to others what he would not have them give to him; also teach him that infection comes through the sputum, in the sputum and by the sputum, and that there is no safety for him or his friends unless it is thoroughly disinfected and properly disposed of. The bodies of people dead of consumption should be enveloped in a sheet, wet with some antiseptic solution, and disposed of in the usual way; or, better still, cremated. Houses in which consumptive patients have lived and everything in them are dangerous and are not safe until thoroughly cleansed from top to bottom and rendered sterile. With the intelligent and educated this problem is comparatively easy.

With the less intelligent and uneducated I am not without hope. Constant dropping will wear away the rock; constant drilling will make them understand; but before that stupidity which makes Christian Science, Dowicism, Weltmerism and the patent-medicine evil possible, even the gods stand helpless. Still I have faith that in the end truth and right living, with sunshine, will prevail, and that the whole loaf will be leavened.

Now, as I have said, this is a curable disease. Some, though far advanced, will recover under the most unpromising circumstances, while others sieken and die when most favorably situated. Personal peculiarity and vital resistance accounts for this. The gospel of the treatment of consumption consists of good food, discipline with kindness, cleanliness, sunshine and fresh air night and day. He who is afraid of the draft and refuses the fresh air is doomed from the start and will do well to check his trunk to the first cemetery, for that is the end of his ticket.

There are no known specifics. The room should be open to the south, east or west all the time and have no unnecessary furniture, no carpets and no hangings; the floor must be kept clean with a mop, wet with an antiseptic solution, and the dusting done by a cloth moistened with the same. The room should be as near outdoors as it can be made. There should be a comfortable place to eat, bathe and dress. If the patient is free from fever and able to be out of bed, he should be comfortably dressed and should stay outdoors; if he has much fever he should be in bed or on a couch, but as near outdoors as possible. All sputum should be caught in a pocket-flask or on pieces of cotton. These pieces of cotton are to be used once and then placed in an envelope and burned when the patient returns to the house. Patients confined to bed should use a spittoon partly filled with an antiseptic solution in which to catch the sputum. Absolute cleanliness must prevail. Clothing removed from the bed and from the patient, as sheets, pilloweases, etc., should be dropped in an antiseptic solution or into boiling water before being put with the common wash.

Exercise should be just short of fatigue, always, and fever cases must be confined to bed until the fever is gone. Pain in the side may be met by a counterirritant, tineture of iodin or by a belladonna plaster. Empycma demands the use of the knife and drainage, always. Osler says, "Make the patient fat and the disease will take care of itself," which is another way of saying, "Improve the nutrition and he will be well." No drugs which interfere with the comfort of the patient in any way are indicated. They will do more harm than good if they are used. Cod-liver oil and creosote will accomplish much in certain cases, but they must be used with sunshine, and not instead of it, and if they disagree with the stomach in the slightest degree are not to be thought of. Cream may often be used to advantage in the place of cod-liver oil. The kidneys should be looked after. Constipation and diarrhea are both to be regulated by diet. Cough mixtures are an abomination and do more harm than good. A simple solution of muriate of ammonia, without any opium, has often answered my purpose better than anything else. Improve the tone of the patient and the eough will be taken care of usually. Sometimes a little treatment to the throat or the pharynx will relieve the most distressing cough and leave the stomach in good condition.

Night sweats may be relieved by a little oxid of zinc or atropin, or a few drops of aromatic sulphuric acid, but the best way to relieve them is to improve the general condition of the patient. Iodoform is much prized in tuberculosis by surgeons and is the best application I have ever used when the larynx is invaded. Hemorrhage should be met by quietly, but firmly and kindly, placing the patient in a recumbent position, assuring him there is little danger, which is true, and giving him a little ergot, aromatic sulphuric acid or even a little common salt if necessary. Patent medicines, though extending the bud of promise, meet none of the indications and will accomplish nothing but harm, by exposing, not only the family, but all the friends, to infection, besides throwing away the patient's only chance of recovery. People with small means should not be sent from home to become the prey of avarice, greed and homesickness, for it is certain to end in disaster. A young man who has pluck, energy and application, with some grasp

of mind and something to occupy it, may do well when sent away, but it will be just as well not to burn the bridge. A husband and wife, though they may have the wealth of Cræsus, will do no good when separated, though they might do

well together.

All these things are to be thought of when advising people to change climate. But not all get well and not all are able to leave home, even if they have the wealth. Suppose the patient grows constantly weaker, pulse more rapid, the feet swell, the voice grows weak, the shadows deepen and the rattles appear; what then? Why, more gospel in the shape of cleanliness and kindness; let it be the cleanliness that is absolute, for there is more danger of affecting others than ever before, and let it be the kindness that spells utility, that removes sordes from the teeth, that prevents bed sores, that adds yet a little comfort to the rugged path, that brings sunshine to his presence and gladness to his heart, so that when he slips into Paradise it will be with pleasing pictures of the last scenes of earth in his mind, that the contrast may not be too great.

OUR DUTY AS REGARDS CONSUMPTION.

C. E. PRICE. EATON.

"We see dimly in the present what is small and what is great, Slow of faith, how weak an arm may turn the iron helm of fate, But the soul is still oracular; amid the market's din List the ominous stern whisper from the Delphic cave within: 'They enslave their children's children who make compromise with sin.'"

The most prevalent and fatal disease of mankind is tuberculosis. seventh of all people fall victims to it. In America alone over 110,000 die of it annually; the ravages of wars are not its equal. But, as startling as are these statistics, the half has not been told, for tuberculosis travels under many other names. It attacks every organ and tissue of the body and may be named accordingly. Tuberculosis of the skin is called lupus; of the glands, scrofula; of the spine, spinal caries; of the hips, morbus coxarius; of the joints and bones, white swelling, and so on. So we have only measured a part of the anguish, poverty and sin which it may carry with it. Our insane hospitals, orphan asylums, homes for crippled children, reformatories and prisons are filled with the direct or indirect results of tuberculosis.

With these facts and figures before us, it does seem that we, as physicians, should not only be aroused to a plan of duty ourselves, but that it shall be impressed upon the minds of every lay person that they too can lend a hand in

suppressing so great an evil.

"The indications for the prevention of consumption are: 1. To destroy the tubercle bacillus and prevent its spread in the dry state. 2. When once it has gained entrance to the body to eliminate it as quickly as possible or inhibit its growth by means of the vital energies. As the tubercle bacillus is the cause, and the only cause of consumption, it is the enemy to build fortifications against. It has been demonstrated that this germ is unable to grow and multiply, outside of the bodies of human beings and animals, except by the artificial cultivation in the laboratory. This is partly because it requires high bodily temperature for its development and partly because it is of slow growth and then is crowded out of existence by other micro-organisms which grow more rapidly. The bacillus gains entrance to the human system most often from tuberculous matter given off by consumptives, after it has become dry and pulverized. It is then taken up with the air and either directly inhaled or taken into the gastro-intestinal tract or ingested from infected meats or milk.

In an address by Dr. Francine before the students of the medical department of the University of Pennsylvania in 1905, he says: "With such statistics as we have as regards consumption, let us consider the interest of the state. This matter is of such vital interest and of such wide-spread importance that without aid from the state and municipal authorities, the profession, even seconded by an intelligent public, is powerless to stop the spread of this scourge. We therefore turn, as we have a right to, to those bodies politic which assure to each and every one of us, life, liberty and the pursuit of happiness.

"The only question to ask is, how can the state help in this crusade? It can help in three most important and effective ways. 1. By establishing sanatoria for the segregation, treatment and employment of those cases which are too poor or ignorant to take care of themselves and in whose carelessness, squalor and filth lies the chief source of infection. 2. By rendering effective financial assistance to free, private or corporative sanatoria already in existence. 3. By requiring the registration of every case of tuberculosis within its confines.

"The state sees and performs wisely its duties in protecting us from the spread of small-pox, scarlet fever and diphtheria, the yearly ravages from which are not individually one-tenth of and in the aggregate do not equal the mortality of tuberculosis. Why, then should it not in certain simple, timely and reasonable ways see its way clear to these more urgent measures?"

The most important question in any disease or medical subject is that of prophylaxis or prevention. The interests or duties of the indvidual consumptive concern us as physicians. Our duty does not end with diagnosing the case, prescribing tonics, food, fresh air, etc. If proper precautions are not taken others are not only endangered but the patient may re-infect himself by his own carelessness and filthy habits, which may result from ignorance if not properly instructed by his medical adviser.

The consumptive patient is the origin and source of danger and it is within his power, by the exercise of a little care and a few simple rules of hygiene, which will in no way interfere with his comfort, to control absolutely the spread of the disease from himself. In the first place it is necessary that all secretions and exerctions should be destroyed by fire or disinfected at once. The sputum, the greatest of all sources from which infection comes, should be expectorated in paper boxes or paper handkerchiefs, and at once burned. In fact he should never cough without a paper handkerchief being held over his mouth to keep particles from being forcibly thrown out. It is by allowing consumptives to expectorate upon floors, carpets, into spittoons and on streets, and then allowing this sputum to become dried and mixed with the air, that the friends, and in fact the community at large, are endangered.

It is the incipient cases and those in the last stage, when they are expectorating most and are too ill and careless to notice, as in all other infectious and contagious diseases, which are the ones that are the most dangerous to the community. It is those who walk the streets or who may work in the factory or attend school that are dangerous. It is in these places that medical inspection is necessary. Superintendents of workshops and superintendents of schools and teachers should have a knowledge of prophylaxis and hygiene, and should see that such persons do not expectorate upon the floor in places from which infection could be spread.

We have no factories in this immediate locality, but a few words as to school sanitation I know will not come amiss, as we have some teachers with us to-day. This subject, I think, may well be divided into three heads: 1. The influence of the school in the production of disease. 2. Educational methods for improving health. 3. Methods of prevention of disease applicable to schools.

Injury to health while in school may result from the following factors: (a) Insanitary arrangements of the school room. (b) Insufficient knowledge of hygiene on the part of the teacher. (c) Too much school work. (d) Worry, excitement and fatigue.

- 1. The school room should be large, well ventilated and well lighted, having sufficient windows and doors, so that the two latter ends can be accomplished. It should also have a high ceiling and a tight floor. A thermometer, in a convenient place in the room, is as essential a piece of furniture as a stove. Both are useless unless watched by the teacher.
- 2. The knowledge of hygiene on the part of the teacher is perhaps a delicate subject for the present meeting, but suffice to say that our County Superintendent should not give a certificate to an applicant not well enough versed in hygiene

and sanitation to watch both the conditions of the school room and school grounds and pupils. Here not only the teacher but the school boards are very negligent. Closets, weeds and all decaying vegetation on the grounds should be cleaned up. Over crowded rooms should not be permitted by the boards.

3. Too much school work. That the school curriculum is often overcrowded there is but little doubt. The remedy for this seems to be not so much a reduction of school hours as an adaption of the amount of work to the capacity of the individual pupil. And here the teachers in the ungraded schools must use their very best judgment. They must make a study of the disposition, ability and inclination of each individual pupil and not overtax the body or mind of any pupil.

4. The natural disposition of some children to worry on account of the strict requirements of the school in regard to punctuality, by the system of competitive markings, and often by the personality of the teacher. Worry in school children seems to be quite common and productive of certain amount of ill health. Here again, the teacher should study each individual pupil and avoid, as far as possible, all worry, excitement and fatigue.

Our second and third divisions are methods for prevention of disease. These can only be accomplished in a mild form in those districts where there is no medical inspection of school children as there is in some cities and states. But here again the teacher can be of great help to each pupil. It will require no extra time and if the teacher will keep in mind that she is, to a great extent, the custodian of her pupils' health, as she hears and sees them recite from day to day, it will be easy for her to tell that the pupil is ill.

It is the duty of every physician, for the good of his community, to see that not only the patient himself be instructed as regards prophylaxis, but that his nurses and friends be so instructed and made to help him carry out these rules. We have no statutory laws for consumptives, but there is a moral law which should be just as effective. The room in which a consumptive is sick should have as little furniture as possible, with no carpets, rugs, or draperies; the floors should be mopped with a damp cloth, not swept; the furniture not dusted, but wiped with a damp cloth, and these at once burned. The house in which a consumptive has lived should be fumigated and disinfected, the same as if he had died from small-pox or diphtheria.

In summing up then I would emphasize: 1. The absolute control and destruction of the sputum. 2. Care and cleanliness in the home, workshop or school in regard to dust and dirt, and in disinfection of articles contaminated by heat. 3. Tuberculous persons should sleep alone. The windows should be kept open both day and night, regardless of weather. 4. Physicians and others should wash their hands thoroughly after examining or being about the patient; nurses who care for these cases can not be too careful not to carry their hands to their lips. It is a good plan when in the house or room with such persons to breath as much as possible through the nose. 5. The bedding, towels and clothing should be frequently changed, especially if soiled, and put immediately in boiling water. Also the toilet vessels and table articles should be boiled after each use. It is the close attention to preventive means that will cradicate "The Great White Plague."

DISCUSSION.

Dr. T. N. Rafferty said that the American people were afflicted with three great curses, viz.: Consumption, cancer, and the patent medicine habit; that of these the first was both preventable and eurable, the second not preventable, and only curable when taken very early, and the third when once firmly fixed was probably incurable. An early diagnosis of consumption is of the utmost importance because treatment then is almost certainly successful. The question as to whether the patient should be told he has tuberculosis should be answered, yes, by all means, as he will be much more likely to submit to proper treatment, and if too far advanced to be cured, will be willing to use proper precautions to protect his family and friends from infection. One of the most serious drawbacks to the successful treatment of these cases is that, during the curable stage.

they have wasted valuable time taking one or more of the much vaunted patent nostrums.

Dr. Frank Dunham quoted from Pogue of Denver in regard to one possibly bad effect of these public meetings on consumption, viz.: That in emphasizing the importance of outdoor and hygienic treatment, and the absence of a specific medicine, those afflicted were often driven to quacks and much advertised nostrums. He said that the individual members of our society should use every chance to combat this tendency, for there was no class of patients for which more could be done by the conscientious physician than those suffering from incipient tuberculosis.

M. E. Cox, City Attorney, read several selections from the Adams articles in *Collier's Weekly* on the patent medicine evil in connection with consumption which delighted and deeply impressed the audience. The ministers were asked to discuss the question, particularly in regard to the class of advertising carried by some of the religious papers. They unanimously denounced these fraudulent advertisements, all declaring that they were no longer accepted by their respective publications, and were being dropped as fast as existing contracts expired. The editor of a local paper expressed himself as being heartily in sympathy with the crusade against consumption, and said he was always ready to publish any lit-

crature in support of it.

Prof. J. C. Arnold, Superintendent of Robinson Public Schools, said in part:— I know I voice the sentiment of every citizen present when I say that it has been a great privilege to attend this meeting of the Crawford County Medical Society. The papers have been most instructive and the spirit of helpfulness shown by the medical fraternity most gratifying. While this auditorium is filled to its utmost capacity, yet those assembled are only a small fraction of the total population of Crawford County, and the great mass of the people can be reached only through the influence of those present. We see how sincere our local physicians are ir imparting information on this very important subject. The teachers of the public schools, by their presence, show their interest in this movement toward checking the progress of the Great White Plague, and will leave this meeting with a feeling of increased responsibility and a broader understanding of their duty in the matter of general public instruction. Each person present has now a greater feeling of security and a clearer knowledge of the cause, treatment and means of prevention, which he will take away with him, not only for his own but also for the good of others. Our schools afford many opportunities for the spread of contagious diseases, such as the exchange of pencils, common drinking cups, dusty floors, and worst of all, the supplementary readers and extra text books to supply the pupils whose parents are too poor to provide the same. These should be frequently disinfected, as the very act of opening a book will carry the germs confined between the leaves to the nostrils and mouth of the child. In well regulated schools children are taught not to spit upon the floor. The platform covering the well, the drainage of yards and vaults, all should be looked after carefully. In schools supplied with city water the drinking fountain on each floor is much superior to cups. Every school building should be regularly fumigated by some standard method. There should be a regular physician in active practice on every school board who can keep the balance of the board awake on these points. Instruction in the causes and prevention of contagious diseases will ere long be made compulsory in our public schools. Patent nostrums now hear their death knell in the crusade that is being wrought against them. An enlightened people are beginning to investigate all things, and as a result the demagogue, the quack, and the grafter are being consumed by the righteous wrath of an indignant and abused public. Our fears are but commensurate with our ignorance. The desire to know is breaking down the barriers erected by the ignorant and superstitious about one of the noblest professions existing today. Such meetings as this are the advance steps toward that general public instruction which will result in eradicating the Great White Plague from our midst.

FORD-IROQUOIS COUNTIES.

The quarterly meeting of the Bi-County (Iroquois and Ford) Medical Society, held at Paxton, Ill. on Tuesday, March 6, last, was a gratifying success. A committee of local members met all incoming trains and escorted the visitors to the Hotel Middlecoff, where a sumptuous banquet was served at the expense of the Paxton physicians who, throughout the day, would not allow their guests to spend a cent. The inner man satisfied, all adjourned to the parlors of the hotel. Order was called by President Miller, the minutes of the last meeting were read and approved, and the following program was then presented. The President's address by Dr. D. W. Miller of Gilman was perhaps the most exhaustive and scholarly review of the progress made by medicine during the last quarter of a century to which the writer ever listened. As the merest mention of the marvels accomplished since the commencement of the microbian era is more than enough to evoke an outburst of responsive enthusiasm at any meeting of medical men, it was perhaps not strange that the president's exceptionally excellent paper was greeted with generous and prolonged applause and elicited none but favorable comment. "Some Cases from My Experience," by Dr. A. J. Newell of Onarga, was interesting and instructive, a story of actual observations, such as always holds an audience. "Tachycardia," by Dr. R. S. McKenzie of Gilman, told briefly all that is now known of functional heart disease and its causes, and was rich in therapcutic suggestions.

Dr. S. S. Fuller's essay on "Veratrum Viride in Eclampsia" was a valuable contribution to our therapcutic armamentarium in one of the most dreaded diseases that perplex physicians. In Dr. Fuller's experience no ill effects have followed the administration of this drug, in even heroic doses, sacrifice of the child was unnecessary, and the mortality was much less than under any other method of treatment.

All the papers were discussed in a manner and spirit which must have been pleasing to those who presented them, and as the debate was participated in by almost every member present, the educational value of the meeting can scarcely be overestimated.

Dr. A. J. Newell suggested that as Gilman is the most accessible and conveniently located point in the two counties all the meetings of the society should henceforth be held there. A majority, however, was opposed to the plan, which consequently was given up.

After a most enjoyable session the society adjourned to next meet at Gilman, Ill., on Tuesday, June 5, 1906. All present pledged themselves, if possible, to attend.

ROBERT LUMLEY, M.D.,

Secretary Bi-County Medical Society.

PERRY COUNTY.

The Perry County Medical Society was recently reorganized at Pinckneyville after remaining dormant since Nov. 15, 1901. It is the intention of the present officers and members to enlist the interest of all physicians in the county and induce them to become members. The next meeting is to be held in DuQuoin in April. The program committee consists of Drs. Pope and Adles, of DuQuoin, and Morrison, of Pinckneyville. An interesting program is promised by these members.

J. W. Smith, Sceretary.

W. L. McCandliss, Vice-President.

SANGAMON COUNTY MEDICAL SOCIETY.

The Sangamon County Medical Society met in the office of Drs. Colby and Bullard, February 10, the room in the library not being available. Minutes of the previous meeting were read and approved. Dr. A. D. Taylor said that formerly he had relied on cocain to relieve the congestion and obstruction to the passages leading from the accessory sinuses, but now uses adrenal preparations. The

committee appointed to revise the constitution reported progress. It was voted that the new constitution be printed and a copy mailed to the members for their consideration. Dr. Bullard was elected to membership in the society.

Dr. Griffith presented the paper of the evening on "The Business Side of the Practice of Medicine." Among the many practical points presented in the paper the following demand special consideration: The essayist advises against working for known deadbeats, as they are not objects of charity, do not appreciate the work done and consume the time that could be employed in the care of the worthy. Maintain the schedule of charges. It is difficult to raise prices. A physician's ability is rated by his charges. Patrons want the best rather than the cheapest. Make statements plain and send them regularly. If they bring no response, send your collector. Eschew contract work. Let your actual services be the basis of your charges. Consider the patron's preference, when it is known, as to the method of collection. Generally a personal call by a collector is most efficient and satisfactory. Finally, do not sue on an account. As much can usually be accomplished by threatened suit; it is inexpensive and there is less tendency to try to injure your reputation.

The paper brought out a discussion, many of the points being opposed by some members. Dr. Dixon commended the paper in general, but deplored the fact that individual members would not maintain the fee bill. Dr. A. D. Taylor thought that the physician's interests would be better conserved by his dispensing his own medicines. Dr. Kreider took exception to this opinion. He also pointed out the fact that the fees and collections here are as good as in any city of its size in the state and better than in many. Dr. Lloyd expressed his intention to take no eases which he knew to be "deadheads," preferring to spend his time with his books and with patients who were honest. Dr. Paulin-Pagette referred to those patients who will pay one doctor and will not pay another. He advises being very frank with such, informing them that their bad record is known and that in order to get further service they must pay as they go.

Dr. Babb spoke of the position in which a physician is sometimes placed by a patron asking if he has not been overcharged by another physician. Dr. Prince related an incident illustrating the difficulty that may attend satisfying a judgment, even after a suit is won. He also detailed a method which has been efficient in his hands, but is somewhat limited in application. It assumed a certain amount of pride on the part of the patron and that he is permanently located. According to this method the patron who asks for time is allowed to fix a convenient date. The doctor then has him give a check on a bank in his own town for the amount and assures him that the check will not be presented for payment until the time fixed by the patron. The patron during this time is supposed to get and deposit the money to meet the check. Seeing his credit in jeopardy, he will make an extra effort to secure the money. When the time arrives for the check to be presented, the physician writes to the patron and impresses on him the importance of protecting his financial rating. The doctor says the method works well in properly selected cases.

Dr. Langdon resolved the practice of medicine into two elements—scientific and commercial. He said that the predominance of the one or the other element determined largely the character and success, professionally or financially, of the physician. He also believed that the young physician should take all cases as they come. Dr. Colby is convinced that the young physician is not warranted in taking "deadhead" cases.

Dr. Kreider presented an interesting case of tuberculosis of the radius in a young lady who had suffered from tubercular infection of the humerus of the other arm five years previously. The patient is otherwise in perfect health. The family history is negative. In the last invasion the diseased bone was chiseled away and the periosteum closed over a quantity of paste made of al. sesame, iodoform and spermaceti. As the bone reforms the paste is absorbed and the wound heals much more promptly and without the depression otherwise obtained. Adjourned.

R. D. Berry, President.

C. R. SPICER, Secretary.

SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting March 12, 1906. Dr. Dixon presented an interesting case in a man past middle age in whom, about ten weeks ago, a localized swelling occurred on the hand. is not painful, is localized, pits on pressure and has not yielded to any treatment. It is likely of an angioneurotic character. Dr. Kelly reported a case of hysteria simulating labor. Dr. Langdon spoke of a similar case simulating pregnancy.

The committee on constitution and by-laws presented copies of the proposed instrument to the society, and, on motion of Dr. Dixon, consideration was laid over until the next meeting. Dr. Dixon presented a communication concerning a proposed sanitarium to be built in this city, also some correspondence between Drs. Egan, Blankmeyer and P. N. Bowman. From these letters it seems that the management of the proposed institution had secured reports from Dr. Blankmeyer on specimens of urine submitted for examination at the laboratory of the State Board of Health and had used these reports in a testimonial appearing in a circular advertising a secret method of treating kidney diseases. Dr. Bowman denied having any part in the advertising matter of the proposed sanitarium or any knowledge of Dr. Blankmeyer's report having been used in the testimonial. Dr. Egan, in a forceful letter, called Dr. Bowman to account and informed him that he must discontinue the use of the report for advertising purposes.

Dr. P. W. Monroe presented the subject of "Lumbar Puncture in Diagnosis and Therapeutics" in an interesting paper. He gave a brief history of the proccdure from its origin and gave a general report on sixty cases done in his hospital service in New York City. The changes in the spinal fluid incident to the various infections of the meninges were noted as important means of differential diagnosis. The class of cases in which lumbar puncture has been of greatest use, from a therapeutic standpoint, is that in which there is excessive pressure on the cord and brain, although the author pointed out that the toxic-laden fluid might better be withdrawn in such cases as cclampsia. Certain skin lesions are reported to have been greatly improved. Instances were reported where solutions of silver salts injected into the lumbar portion of the spinal cord had been recovered in remote regions, showing that dissemination of the injected material really takes place. A doubt was expressed regarding the efficiency of remedies so administered. The most obvious results were the relief of symptoms due to pressure. The paper was practical and was well received. Drs. Kreider, Kelly, Dixon, Patton and Taylor took part in the discussion.

The meeting closed in order.

R. D. BERRY, President.

C. R. SPICER, Secretary.

VERMILION COUNTY.

The Vermilion County Medical Society met Monday evening, March 12, in the City Hall. Minutes of February meeting read and adopted. The following program was presented: "Emergency Therapeutics," O. W. Michael. Discussion led by Solomon Jones. "Emergency Surgery," P. H. Fithian. Discussion led by T. E. Walton.

A motion was made and carried that the president appoint a committee to confer with the city council to attempt the creation of an ordinance to enforce the proper slaughter, drawing and dressing of all fowl, fish or game offered for sale in the local markets. Drs. J. M. Guy, M. Sahud, E. B. Cooley, J. H. McIntosh and Solomon Jones were appointed on this committee.

The society, by a decided majority vote, approved the action and sanctioned the efforts of the Committee on National Medical Legislation in the following matters: 1. A department of public health, with representation in the cabinet. 2. The army medical reorganization bill. 3. The pure food and dairy bill. 4. Government regulation of indigent consumptives. 5. Government recognition of the services of Dr. James Carroll. 6. Bill for the relief of Mrs. William A. Hammond. Regarding the bill to restore the canteen in the army, the society took a unanimous stand opposing such a measure. Adjourned. E. E. CLARK, Secretary.

WILL COUNTY MEDICAL.

The regular meeting of the Will County Medical Society was held March 6, 1906, in the Auditorium Building, Joliet. The program was as follows: "The Use of the Forceps in Obstetrical Practice." This was a general discussion, led by President Nash. "The Open Method of Treatment of Fractures," by Dr. George M. Peairs, surgeon for the Illinois Steel Company at Joliet. Dr. Peairs has had a large experience with fractures with gratifying success, therefore this paper was a valuable one. "The Relation of Physician and Pharmacist," by Charles H. Avery, President of the Retail Druggists' Association of Chicago, was another practical and interesting paper. [For Dr. Peairs' paper on fractures, see p. 344.]

Members present: Drs. Nash, Cushing, Williamson, Dougall, Hummel, Brannon, Lennon, Cohenour, Peairs, Bowles of Joliet, Dr. Eldredge of Frankfort, McClannahan of Manhattan, Kingston of Loekport and Gilbert of Elwood. Visitors:

Charles H. Avery of Chieago and A. W. Flexer, Joliet.

USE AND ABUSE OF DIPHTHERITIC ANTITOXIN.*

E. W. Weis,

OTTAWA.

I take it for granted that there is not one of us who is not able to diagnose diphtheria when he sees it at any stage, for if he is in any doubt during the presence of an epidemic all suspicious eases of inflammation of the tonsils or the eontiguous parts, or eroup, should be elassed as diphtheria. Should a subsequent eulture determine the faet that diphtheria bacillus is not present no harm has been done. Per contra, however mild the case of diphtheritie infection, much good has been the result. My subject seems a superfluous one, and my only excuse for its presentation is a rather large personal experience with the disease in the last two months, and particularly my coming into contact in my capacity as health officer with a lamentable amount of ignorance. It is particularly timely owing to the fact that this disease is probably epidemie at present all over the middle west. In comparing the results of this epidemic with others, to our great grief and astonishment we find that the death rate is far beyond what it should be. You are all aware that Chicago, probably the original focus of infection, has on the average over one hundred eases per week, with a death rate of over 12 per eent. I understand that a city in the eenter of the state is now undergoing an epidemie of a very virulent type of diphtheria with a high rate of mortality, and this in the face of statistics heretofore given which show, in a large number of eases of diphtheritic infection, a mortality of only 8 per eent. Personally, I think 8 per cent. is entirely too high. I think that in all cases of diphtheritic infection, excepting the laryngeal variety, there should be a recovery of 100 per eent.; and where this is not the ease, I state fearlessly and unequivoeally, and without fear of successful contradiction, that some one has blundered, that some one is responsible. Whether this responsibility should rest with the parents or with the medical man I am not prepared to say, but somebody is at fault when a ehild dies to-day of diphtheritie infection. Since the first of last August I have come into contact with about fifty cases of diphtheritic infection in my eapacity as health officer and physician. Some of these eases were so mild that they did not attract any special attention until after a grave one had asserted itself, one that was serious from the very beginning, and quite formidable when first noticed. I recall one ease in particular. I was called at 6 o'clock in the evening and found the patient, about 12 years of age, suffering with a pain in her throat. Her temperature was 1021/2 F., but, upon examination, the throat presented simply a slight redness. The tonsils were not swollen. The patient had been subject to tonsillitis, and had a slight enlargement of the tonsils, but nothing was seen in the throat upon which a positive diagnosis of diphtheritie infection could be based. Owing to the fact that diphtheria was in the neighbor-

^{*} Read before the North Central District Med. Association, December.

hood, and this child was attending school in which diphtheria had been found but a few days before, I stated to the mother that I was certain that this child was infected, but would wait until morning to complete my diagnosis. In the morning not only the tonsils but the uvula and the soft parts surrounding were covered by the characteristic membrane. Here was a case that looked vicious. It was vicious. It was one of those cases in which, under the old régime, nothing could be looked for except the usual flowers. Temperature was the same, $102\frac{1}{2}$. I gave antitoxin at noon. At 4 p. m. the temperature had risen two-tenths of a degree. The next morning it was 99 F. The next day the patient was out of bed. In this house there were four other children. An immunizing dose of one thousand units established complete immunity, although one of the children had begun to complain of sore throat, and had a slight rise in temperature. This case, in its inception, is rather atypical, but the effect of the use of diphtheritic antitoxin is and was typical.

The question of the use of diphtheritic antitoxin can be summed up in a few words. Use it often, use it early, and use it in sufficient quantity. This is the secret of the curative properties of diphtheritic antitoxin. In the presence of an epidemic, if you are in doubt, use it. The amount used depends upon the appearance of each individual case. If you have a lingering doubt in your mind as to whether to use two or three thousand units, always use the larger dose. I do not allow the question of age to influence me at all. I would give a 2-year-old the same quantity as one 10 years old. I am governed entirely by the degree of intoxication. During the present epidemic I have not had a single death, and with one exception not a single case that continued over four days. The majority of them responded so quickly that they were convalescent practically on the second day. This experience is not unique and will not be where diphtheritic antitoxin is used as it should be.

I want to emphasize what I have stated above, that 100 per cent. should be the rate of recoveries in all cases of tonsillar, pharyngeal and nasal diphtheria. I will go a step further, and I realize fully in taking this step what the effect of this assertion will be when I state that this same rate of mortality ought to be maintained in the laryngeal variety. Our experience, however, unfortunately compels us to modify this statement. Doubt regarding the diagnosis is responsible for painful results. Doubt as to whether the child is suffering from membraneous croup of diphtheria or from the non-diphtheritic variety, puts off the use of antitoxin until it is too late to obtain full beneficial effects. The greatest mistake, however, is using it in too small quantity and not watching the temperature sufficiently close so as to repeat the dose within the prescribed time. You all know that in the laryngeal variety of whatsoever age, the very smallest quantity to be used should be four thousand units, and if the temperature shows that intoxication still exists within four to six hours, the same amount or a larger quantity should be given. It is a misuse of diphtheritic antitoxin in any case of larvingeal infection to give a small quantity, say of one or two thousand units. It gives diphtheritie antitoxin a black eve when a case of the character just mentioned is treated in the way described. At the present time, with the information so thoroughly disseminated by the manufacturers of antitoxin, there is no excuse for any medical man not using this remedy properly. My observation has shown that intelligent physicians who take no chances use antitoxin in the necessary quantity, immediately upon the recognition of the larnygeal involvement, and use it regularly, have gotten recoveries in every case. I regret to say that in several cases where rules were not followed death claimed the victim.

Do I make myself sufficiently clear? Do you understand that the use of diphtheritic antitoxin is followed by the best results, and the abuse of it by the worst possible results? I want you to know that, as a physician, I heartily sympathize with the possible errors and vacillating policy of physicians, due perhaps to the expense attached to the use of diphtheritic antitoxin, but as a sanitary officer I cannot and do not excuse the failure to use it properly.

NEWS OF THE STATE

- John P. Nelson, of Fiatt, has removed to Briant.
- Dr. L. W. Fulton, of New Berlin, has removed to Loami.
- Dr. E. L. Hendricks has removed from Stillman Valley to Lanark.
- Dr. H. H. Sherwood has sold his practice at New Windsor and has located at Bowen.
- Dr. D. W. Cooper has given up his practice at Henning and has returned to Seymour, his old home.
- Dr. and Mrs. C. W. Cargill, of Mason City, lost a son, Joseph, by drowning, Friday, March 16, 1906.
- The city council of Mattoon will adopt an ordinance prohibiting the practice of mystic cults in that city.
- Dr. E. N. Wheeler has disposed of his practice in Latham, Logan County, and will locate in Galesburg.
- The Morgan County Medical Society is planning the organization of a local association for the prevention and cure of tuberculosis.
- Dr. A. W. James, of Elkhart, has sold his practice to Dr. E. R. Van Meter, a graduate of St. Louis, who has practiced in Lincoln for about one year.
- Dr. W. A. Evans delivered a popular lecture on the subject of "Treatment of Consumption" in the Chicago Public Library Building on March 31.
- Dr. N. Leeds and Major Robert Finley of Danville left on March 15 for Panama, where Dr. Leeds will serve as contract surgeon in the government service.
- Dr. H. C. Van Atta of Lerna and Dr. H. M. Little of Janesville were recently acquitted in the Effingham County Circuit Court on the charge of manslaughter.
- Dr. H. A. Cuthbertson of 6242 Woodlawn avenue sailed the latter part of March for Europe, to take a three months' course of study in London, Paris and Vienna.

Owners of property on Michigan avenue, Chicago, are circulating a petition, protesting against the location of the new building of St. Luke's Hospital on the boulevard.

Noel Godfrey, 16-year-old son of Frank Godfrey, of Bloomington, has been adjudged insane, and sent to the asylum of Jacksonville, as the result of hypnotic experiments.

Dr. Carl Breus, professor of gynecology in the University of Vienna, will visit Chicago April 15. Dr. Breus and his wife are visiting the United States on an extended tour.

The Evanston City Council is considering an ordinance, introduced by Alderman James P. Grier, prohibiting the sale of all poultry which is not drawn at the time of slaughter.

Hillsboro Hospital Association, Hillsboro, has been incorporated and authorized to maintain a hospital. The incorporators are Frank H. Brown, Joseph M. Klar and Thomas M. Jett.

Diphtheria has been prevalent in the Juvenile Home for Boys, 625 West Adams street, Chicago, six cases having been reported since March 11 among the twenty-seven inmates of the Home.

Mrs. Anna Jefferson of Chicago has brought suit for \$25,000 damages against Dr. John W. Lewis, 691 West Lake street, alleging that Dr. Lewis has failed to keep his promise to marry her.

An involuntary petition in bankruptcy was filed on March 3 against the Goat Lymph Sanitarium Association of Chicago. The liabilities arc \$4,000.00 and the tangible assets less than \$2,000.00.

- John P. Wilson, President of the Maurice Porter Hospital, Chicago, has purchased a site for the new hospital building, at Lincoln and Fullerton avenues. The price paid for the land was \$80,000.
- Dr. J. D. Hammond and wife of the Auditorium Annex, Chicago, left on March 31 for a three months' trip in Europe. Dr. Hammond expects to attend the International Congress at Lisbon, Portugal.
- Dr. John Heywood was fined \$50.00 and sent to the Bridewell by Justice Mahoney of Chicago recently. Dr. Heywood asked the court to send him to the Bridewell in order that he might overcome the cocain habit.

Adolph Sieffert, 7215 Himan street, Chicago, has sued the Auld Medical Company for \$80.00 paid under a contract which, he asserts, provided that he would be cured of a disease which had been pronounced incurable.

- Dr. Fenton B. Turck of Chicago has sailed for Europe for a trip of two months' duration. Dr. Turck will attend the International Medical Congress at Lisbon, Portugal, where he is on the program for a paper on "Gastric Ulcer."
- Dr. S. V. Balderstone delivered an address recently before the Mothers' Club of Evanston, in which he urged a return to the simpler life of the past generations as necessary for the physical development of school girls and young women.

Dr. Robert H. Babcock delivered a lecture on pneumonia in the Chicago Public Library Building on Saturday, March 17. This lecture is

one of the series of free popular lectures given under the auspices of the Chicago Medical Society.

- Dr. H. L. Peas, of Monmouth, Ill., who formerly practiced in Chicago, has been sucd for \$25,000 damages by a janitor in Chicago, who alleges malpractice in the treatment of a fracture of the hip which he suffered about two years ago.
- Dr. W. A. Evans of Chicago lectured in Streator on March 14 on "Causes and Methods of Prevention of Tuberculosis." The lecture was given under the auspices of a local society organized about a year ago to prevent the spread of tuberculosis.
- Dr. N. S. Davis delivered a popular lecture at the Public Library Building, Chicago, March 24, on "Exercise; Its Good and Ill Effects." The lecture was one of the popular course given under the auspices of the Chicago Medical Society.

After suffering ten days from erysipelas, Mrs. Lucia Due refused to allow a physician to attend her. Due and his wife have been conducting a so-called Christian Home Mission at 817 Armitage avenue. After being ill for two weeks, the woman succumbed to the disease.

A matinee for the benefit of the new Chicago Tuberculosis Institute was given at the Illinois Theater under the direction of Miss Olga Nethersole on April 5. The purpose of the entertainment was to secure funds to establish a dispensary for the treatment of tuberculosis.

Dr. Lucy Waite and Dr. Sarah Alexander, well-known women physicians of Chicago and members of the Chicago Medical Society. left, on April 3, for Lisbon, Portugal, to attend the coming meeting of the International Medical Congress. They expect to be gone about two months.

Lafayette Hayes, a colored man, was recently arrested and fined one hundred dollars by Justice Underwood of Chicago for selling water purported to be blessed and to contain miraculous power to cure all diseases. Hayes had been doing a large business by selling water to ignorant negroes at one dollar a bottle.

Dr. W. G. Willard, 1104 Washington boulevard, Chicago, and his family, consisting of his wife and four children, had a narrow escape from death by fire on March 17. The fire started early in the morning from an overheated furnace in the basement. The occupants of the house were rescued by firemen.

The report of the Board of Trustees of the Watertown Hospital for the quarter ending Dec. 31, 1905, shows that the cost per capita at Watertown was \$30.88 for the 1,172 patients in the institution. The next lowest figure was furnished by the Hospital for the Incurable Insane at South Bartonville, where the cost was \$34.18.

Harry Swanson, 7 years old, 1946 Hermitage avenue, Chicago, died on March 25, following the refusal of his parents, who are followers of

Dowie, to allow Medical Inspector Paul Morf to administer antitoxin. The Health Department refused to issue a death certificate under the circumstances, referring the case to the coroner's office.

Dr. Edward G. Burgman, 627 Fullerton avenue, was overcome by gas, on March 22, while searching for a leak in a gas pipe under the basement floor of his house. Henry Dunlap, who attempted to rescue him, and Mrs. Burgman, who also tried to save her husband, were both overcome. Policemen rescued the three of them with much difficulty.

Residents of Irving Park are endeavoring to compel market gardeners to remove the decaying stalks of vegetables which have herctofore been left in the ground. It is claimed that the large amount of decaying vegetable matter in the vicinity of Irving Park is responsible for the numerous epidemics of scarlet fever and diphtheria in that suburb.

At a recent meeting of the Kewanee Physicians' Club it was decided to reorganize the society under the name of the St. Francis Hospital Staff. Dr. W. H. Cole was elected president, Dr. W. D. Hohmann vice-president, and Dr. H. M. Heflin secretary. The report for the past year showed that 978 patients had been cared for in the hospital during that time.

Dr. George Campbell, 510 North Second avenue, Maywood, disappeared recently, after destroying all photographs of himself. Mrs. Campbell says her husband told her he had an office in the Masonic Temple, Chicago, with Dr. William Smith. The police have not been able to find any such man in the Masonic Temple nor to obtain any trace of Dr. Campbell.

Dr. Chalfant of Streator, president of the La Salle County Medical Society, and Dr. George Dicus, secretary of the Northern Illinois Medical Association, are arranging for a district medical meeting to be held in Ottawa on April 20. One object of the meeting is to bring physicians of the surrounding counties together to listen to an address by Dr. J. N. McCormack.

Dr. E. R. Robinson, an elderly and probably insane physician, caused much excitement in the neighborhood of Twenty-seventh and State streets, Chicago, recently. Dr. Robinson, who, it is said, was injured several years ago in a street car accident, labored under the delusion that he was being followed by detectives in the employ of the street car company. He was arrested by two detectives and two large revolvers taken from him.

The Children's Hospital Society of Chicago has issued a report of the progress in the last three years. This society, of which Dr. Frank Billings is president, Judge Julian W. Mack, vice-president, and Dr. Frank S. Churchill, secretary, will endeavor next year to get a bill through the state legislature providing for the establishment of a state colony for epileptics in Illinois. The society is also planning the erection of a \$500,000 hospital for children suffering from infectious diseases.

Dr. Robert A. Noble, of Bloomington, secretary of the McLean County Medical Society, has left for a year's study and travel in Europe. Mrs. Noble accompanied him. Dr. O. M. Rhodes, of Bloomington, has been elected to fill the vacant secretaryship.

Alderman Scully of the Chicago City Council has introduced an order in the Council, asking for an opinion from the Corporation Counsel as to the right of the city to establish and maintain a hospital for victims of delirium tremens. Alderman Scully says that many of the victims of alcoholism are seriously or fatally injured, due to lack of proper care and attention when confined in the cells of police stations.

The Chicago Medical Society, under the direction of the committee on criminal abortion, of which Dr. Rudolph Holmes is chairman, has again taken up the matter of illegal advertising in the daily papers and is endeavoring to secure the co-operation of the newspapers in the city in excluding these advertisements from the advertising columns. Two of the largest newspapers of Chicago have agreed to co-operate with the society.

Mrs. Rebecca Brown-Brown, of Decatur, wife of Dr. Everett J. Brown, died after a short illness of uremic coma, February 22, 1906. Mrs. Brown was the daughter of Dr. Lloyd Brown, of Jacksonville, one of the early practitioners of Morgan County, and through her father and husband has been a familiar figure to the medical profession in the central part of the state. She filled a high place in the social circles of Decatur. Dr. Brown has the sympathy of the entire profession in his great loss.

The Secretary of State has licensed the following companies: Klarck Institute Company, Chicago; capital, \$10.000; treatment of inebriates; incorporators, Frederick Klarck, Nathan S. Smyser, John A. McKeown. Doctor Fosgate Company, Chicago; capital, \$2,500; manufacturing medical and surgical instruments; incorporators, Charles E. Hunt, Daniel O. Fosgate, Ida M. Fosgate. National Medical and Appliance Company, Chicago; capital, \$500; manufacturing surgical and medical appliances; incorporators, Benj. Leveing, A. Allen Boone, John T. Welch.

The Eastern Illinois Ophthalmological and Otological Society held its last meeting in Decatur March 6. The organization was completed and the by-laws approved. The following officers were elected: President, Dr. J. M. Sanders, Decatur; vice-president, Dr. Benjamin Gleeson, Danville; secretary-treasurer, Dr. C. P. Hoffman, Danville. The following cities are included in the district: Danville, Mattoon, Decatur, Champaign, Paxton and Bloomington. The society has at present a membership of twenty-one. The next meeting of the society will be held in Bloomington the first Tuesday in June, at 7:30 p. m., at Dr. J. Whitefield Smith's office.

Mrs. Marietta Chapin Pearsons, the wife of Dr. Daniel K. Pearsons, the millionaire philanthropist of Hinsdale, died at her home on Friday,

March 30, after an illness of several months. Dr. and Mrs. Pearsons were married in 1847, at which time Dr. Pearsons was practicing medicine in Chicopee, Massachusetts. In 1857 they came west and located in Ogle County, Illinois. In 1860 they removed to Chicago, where they resided until 1885, when they moved to their present home in Hinsdale. Mrs. Pearson's death will be a great loss to the various philanthropic enterprises in which she has been interested and which she and her husband have liberally supported.

The Chicago Health Department has issued a bulletin censuring physicians for lack of care in the matter of disinfection of premises occupied by patients before the infectious period has passed. Dr. Heman Spalding, chief medical inspector, says: "At the present time we have no less than twenty-five requests for disinfection from physicians, which are held up, because visits to the houses showed that the patients were still 'scaling' from scarlet fever and were, therefore, not ready for disinfection." The death rate for March, as shown in the same number of the bulletin, was 14.15, the lowest March death rate in fifty years, with the exception of March, 1901. The average March death rate is 18.66.

The Tuberculosis Institute of Chicago has been incorporated with Dr. Frank Billings as president, James H. Eckels as treasurer, E. P. Bicknell, secretary of the Chicago Bureau of Associated Charities, as secretary, and Dr. Henry B. Favill as chairman of the Board of Trustees. The work as outlined by the officers contemplates an educational department which is to carry on the campaign of public instruction regarding tuberculosis by means of lectures and the distribution of printed matter; a department for the establishment of sanitariums and camps, for the treatment of incipient cases, and a department which will conduct a dispensary for the treatment of patients suffering from this disease who are not able to leave the city.

The Brokaw Hospital of Bloomington has added some new equipments to the operating room. The management has purchased and installed a steam pressure dressing sterilizer, the Kny-Scheerer latest model. Among other utilities recently purchased are wall stands, triple basins, immersion stands, glass tables, etc. The hospital has just completed another successful year, as is shown by the Annual Report which is being published and will be ready for distribution in a few days. One of the practical features of this institution is the provision of a visiting nurse, whose duty it is to visit the poor of the city and render gratuitous assistance to the sick when needed. Miss Jessie Yancey is employed in this capacity and is doing very efficient work.

A movement to obtain from the next Illinois Legislature an appropriation for a colony of epileptics has been inaugurated by the Children's Hospital Society of Chicago. A meeting was held recently in the rooms of the Chicago Woman's Club, at which addresses were made by Dr. William P. Spratling, Medical Director of the Craig Colony for Epileptics at Sonyea, New York; Dr. V. H. Podstata, Superintendent of the Dunning Asylum, and Miss Jane Addams of Hull House. At the close of the meeting a resolution, asking the Legislature for an appropriation,

was introduced by Mrs. Laurens, Chairman of the Reform Committee of the Chieago Woman's Club, and was unanimously adopted. Dr. Spratling stated that the proportion of epileptics is about one to five hundred.

On March 22, 1906, the following members of the faculty of the American College of Medicine and Surgery (Medical Department of Valparaiso University) sent in their resignations: Henry S. Tucker, dean, Head Professor of Gynecology; Ross C. Whitman, Head Professor of Pathology; Victor J. Baccus, Head Professor of Surgery; Henry G. Anthony, Head Professor of Dermatology and Genito-urinary Diseases; Charles H. Francis, Head Professor of Ophthalmology; Henry F. Lewis, Head Professor of Obstetrics; J. Rawson Pennington, Professor of Rectal Diseases; George E. Baxter, Professor of Pediatrics; George J. Tobias, Professor of Hygiene and Preventive Medicine; J. McDonald Scott, Assistant Professor of Surgery; Mary O. Porter, Assistant Professor of Otology; Arthur N. Mackey, Instructor in Dermatology; Charles D. Hulbert, Instructor in Dermatology.

The Appellate Court deeided, on March 28, that N. News Wood, the so-ealled president and superintendent of the Christian Hospital, must pay a fine of \$100.00 and serve a ten days' sentence in the county jail for violating the injunction of the court restraining him from using the name and photograph of Dr. John B. Murphy in advertising his hospital. The Christian Hospital was also fined \$250.00. In May, 1903, Dr. Murphy received a letter from Wood, informing him that he had been elected president of the surgical staff of the Christian Hospital. As he had never heard of the hospital, and as his name was being used for the purpose of drawing other physicians into the scheme, Dr. Murphy secured a writ of injunction restraining the hospital from making any use of his name or photograph. As Wood continued to violate the injunction, he was brought into court on an attachment for contempt and fined. The case was appealed, with the result as given.

The examining board of Cook County Hospital has announced the names of the members of the graduating elasses of 1906 who were successful in passing the examination for internes in the County and Dunning Hospitals. The sueecssful eandidates are: Lawrence M. Schmidt, R. L. Bartis, Fred Epplen, C. A. Katherman, E. P. Oldham, Eagan W. Fishman, James F. Churehill, Evan S. Evans, M. J. Moes, M. T. Easton, F. S. Stocking, A. H. Curtis, W. E. Fehlmann, Robert C. Menzies, J. R. Harder, H. E. Moek, Adolph B. Smith, M. J. Moldenhauer, Rawson J. Pickard, Thomas H. Boughton. Maurice Lewison, Nelle L. Storer, Harold B. Thompson, Ed J. Pengelly, B. S. Hutchinson, M. D. Peterson, R. H. Wellington, W. B. Dougherty, R. G. Stevenson, Ralph E. Keyser, James A. Barrett, Samuel Foman, C. E. Harris, Herbert B. Wellings, Mrs. H. W. Weightman, Overton Brooks, Preston R. Merrill, Mark Jampolis, E. I. Hottinger, Dirk Boumis, H. J. White, G. E. Goodrieh, Louis J. Polloch, G. W. Hoehrein, William J. Napheys, Walter K. Long, Roy W. Portens, Samuel B. Strong, W. E. O'Neil, J. S. Studebaker, Montague Francis, Eugene A. Spitz, Benjamin Berry.

NEW MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY.

During the month of March the following physicians have been elected members of the Illinois State Medical Society:

ADAMS COUNTY.

G. L. Lierle, Quincy.

CALHOUN COUNTY.

G. A. Williams, Hardin.

CARROLL COUNTY.

J. B. Schreiter, Savanna.

C. P. Colehour, Mt. Carroll.

CHAMPAIGN COUNTY.

E. H. Kincheloe, Sidney.

COOK COUNTY.

H. H. G. Schmidt.

G. F. Berger.

Arthur M. Brianza.
Dwight Clark.
Arthur H. De Mendoza.
Louis W. Dunavan.

J. C. Dunn.

Jacob L. Eisendrath.

F. Ozro Elliott.

John Phillip Gibbs.

William F. Gorth.

F. G. Hopkins.

H. Luella Hukill.

C. E. Jones.

J. H. Kincaid.

A. C. Klentgen.

James M. Knox.

Louis C. Koier.

R. W. Lakemeyer.

C. W. Morrow.

Sarah A. Noble. Thomas J. Palmer. Ben. L. Reitman. J. Schachter. George M. Schaubel. Louis Schultz. Fred S. Selby.

W. J. Sieminowicz. F. M. Vanatta.

FOX RIVER VALLEY.

W. A. Mason, Algonquin.

S. R. Ward, Richmond.

E. J. Vail, Elgin. R. G. Scott, Geneva.

MADISON COUNTY.

Eugene Cahn, St. Jacobs.

MOULTRIE COUNTY.

Howard Hamilton. Bethany. S. L. Stevens, Dalton City.

PIATT COUNTY.

D. M. Marville, Deland.

E. Y. Young, Mansfield.

ST. CLAIR COUNTY.

J. C. Smith, East St. Louis.

E. F. Schive, Mascoutah.

WINNEBAGO COUNTY.

F. W. Calkins, Rockford.

F. H. Kimball, Rockford.

H. B. Bailey, Rockford.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of March, 1906, the following members of the Illinois State Medical Society became members of the American Medical Association:

Allen, H. S., New Boston.
Allin, F. W., Chicago.
Bacon, J. H., Peoria.
Beard, L. A., Polo.
Berger, G. F., Chicago.
Buford, C. G., Chicago.
Buss, F. J. Chicago.
Cook, E. A., Upper Alton.
Conlon, A. A., Chicago.
Cretors. F. G., Paris.
Champion, Joseph Van Meter.
Mansfield. Mansfield. Daum, E. F., Chicago, Duncan, E. M., Marshall. Eisendrath, J. L., Chicago. Finch, J. H., Champaign.

Galloway, George, Chicago. Gibson, O. N., Eldorado. Graham, Ralph, Biggsville. Greene, E. B., Chicago. Griffith. J. C., Bushnell. Groth, W. F., Chicago. Haller, Joseph, Lanark.
Haller, Joseph, Lanark.
Hoover, M. O., Chicago.
Konzelman, A., Chicago.
Kramp, A. F., Chicago.
Lane, Francis, Chicago.
Little, H. M., East St. Louis.
Lydwig, H. M. Chicago. Ludwig, H. M., Chicago. McCormick. F. C., Normal. Moore, M. T., Chicago. Motter, T. I., Chicago.

Noakes, T. V., La Prairie. Olsen, Marie A., Chicago. Palmer, T. J. Maywood. Peck, W. H., Chicago. Read, C. F., Geneva. Reitman, B. L., Chicago. Rischar, Eduard, Chicago. Roberts, R. B., Augusta. Sloey, James, Lebanon.

Slogn, Valborg, Chicago.
Smith, M. H., Colona Station.
Sogsworth, John, Wilmette.
Stewart, A. E., Chicago.
Train, John A., Chicago.
Trueblood. R. R., Lawrenceville.
Vanatta, F. M., Dunning.
Wright, Emily, Rock Island.
Yantis, D. E., Foosland.

MARRIAGES.

WILLIAM N. COOLEY, M.D., to Miss Ella Victoria Engstrom, both of Peoria, February 21.

DEATHS.

P. W. BLAKELEY, M.D., died at his home in Marion March 4.

LESTER M. BURROUGHS, M.D., died at Batavia, March 23, aged 80.

Lewis M. Webb, M.D., died at his home in Ewing, Illinois, March 9, aged 59.

FREDERICK W. BYFIELD, M.D., died at his home in Sorento, March 20, aged 76.

WILLIAM HILL, M.D., died at his home in Bloomington, Illinois, March 1, aged 77.

EUGENE S. ATWOOD, M.D., a graduate of Rush Medical College, Chicago, 1877, died in Chicago March 2.

NICHOLAS J. DORSEY, M.D., University of Maryland School of Medicine, 1847, died in Joliet March 11, aged 84.

Nelson H. Church, M.D., Rush Medical College, Chicago, 1869, died at his home in Chicago, March 5, aged 63.

STEPHEN L. BRECKENRIDGE, M.D., St. Louis Medical College, 1879, died at his home in Riverside February 21, aged 44.

ALBERT D. HILL, M.D., Albany Medical College, 1879, died suddenly from heart disease, at his home in Chicago, March 4, aged 57.

James Hyser Hill, M.D., University of Louisville Medical Department, 1850, died at his home in Springfield March 6, aged 81.

PAUL N. ZILLIKEN, M.D., a graduate of the Homeopathic Medical College of Missouri, died at Evansville, March 18, of nephritis.

RICHARD H. KENNING, M.D., a graduate of the College of Physicians and Surgeons of Manitoba, 1883, died at his home in Chicago, March 6, aged 58.

ADDISON H. FOSTER, M.D., a graduate of the College of Physicians and Surgeons of New York in 1886, died at his home in Oak Park March 3.

ROBERT E. LEE TADLOCK, M.D., graduate of the College of Physicians and Surgeons, Keokuk, Iowa, 1896, died from typhoid fever at his home in LaCrosse, March 15, aged 38.

ABEL L. DARLING, M.D., a graduate of the Cincinnati Eclectic Medical Institute in 1881, died suddenly at a hotel in Pekin from heart disease February 23, aged 55. Dr. Darling had been located for a number of years at Kilbourne.

Dr. Harry McKennan, of Paris, secretary of the Æsculapian Society of the Wabash Valley, died recently at his home of pneumonia. Dr. McKennan was one of the progressive practitioners of the eastern part community.

SAMUEL KEMP FALLS, M.D., a graduate of the Medical Department of McGill University, Montreal, 1878, for a number of years a member of the Faculty of Rush Medical College, Chicago, died suddenly in a street car in Chicago from cerebral hemorrhage March 22, aged 55.

IRA H. GILLUM, M.D., a graduate of Rush Medical College, Chicago, 1874, died at his home in Milford, March 7, from cerebral hemorrhage. Dr. Gillum was a soldier in the Civil War, a member of the Indiana Legislature, ex-chairman of the Iroquois County Board of Supervisors and a member of the Board of Aldermen of Milford.

Leonard Lawshee Skelton, M.D., a graduate of Northwestern University Medical School, Chicago, 1899, a member of the staff of the Illinois Eastern Hospital for the Insane, Kankakee, for several years, professor of physiology, Chicago College of Dental Surgery, professor of internal medicine and physical diagnosis, Chicago Clinical School, professor of nervous and mental diseases at the Illinois Medical College, Chicago, died at his home in Chicago, March 14, from uremia, aged 42.

THOMAS L. CATHERWOOD, M.D., was born at Abington, Va., July 5, 1827; died at Shelbyville, Ill., March 18, 1906. His early life was spent in Carlisle, Indiana. In 1843, at the age of 16, he began the study of medicine and attended lectures at Louisville, Ky. On April 13, 1847, he opened an office and began the practice of medicine at Middletown, Vigo County, Indiana, and continued for almost 59 years, until March 4, 1906, when, after having returned home from visiting some patients, he was suddenly stricken with paralysis, from which he died two weeks later. He moved from Middletown, Ind., to Moweaqua, Ill., in 1854, and to Shelbyville, Ill., 1876. In 1870 he attended a course in the Miami Medical College at Cincinnati and received the degree of M.D. from that institution. He was an active and energetic man and had a large practice up to the day he was stricken. As late as 1902 he took a postgraduate course in the Chicago Policlinic. He was a member of the American Medical Association and the Illinois State Medical Society, ex-president of the Central Illinois District Medical Society, and at the time of his death president of the Shelby County Medical Society.

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ORIGINAL ARTICLES

APHASIA.

H. M. SEDGWICK, M.D.

PEORIA.

There are in the cortex of the cerebrum various more or less welldefined areas, known as centers, some of which are sensory, others motor. These centers are connected together by innumerable fibers, called association fibers. They are also correlated by means of appropriate conduction fibers, with the peripheral sense organs on the one hand and with the voluntary muscular system on the other. Sensations coming from objects in the outer world are transmitted by the sense organs, projected on the sensory centers, and taken cognizance of in higher or association centers as percepts and ideas of those objects. The doctrine which teaches that manifestations in peripheral organs are centralized in cortical areas is known as the doctrine of cerebral localization of function. It is a generalization not alone suggestive to the psychologist who seeks to discover the unity of body and mind; but it is an induction of inestimable value to the practicing physician whose endeavor it is to make deductions of the location and extent of cortical disease from correlative bodily symptoms. So far as we at present know, localizing symptoms are derived only from affections of the sensory, motor and speech centers, together with the tracts that associate them together, and connect them with the periphery of the body. Of all localizing symptoms, none are more significant, because none are more striking, none more definitive, than are those constituting the various defects in speech. Indeed, it was by a study of speech and its defects that investigators, early in the preceding century, were first led to see the relation existing between function and center. In 1825, Boullaud of France thought that the faculty of language might be localized in the frontal lobes of the brain. In 1836, Marc Dax still further limited the faculty to the frontal part of the left hemisphere. Dax's monograph of that year was entitled "Lesions of the Left Half of the Brain, Coinciding with Loss of Memory of the Signs of Thought." But Broca, in 1861, conceived the idea, from his clinical studies and supplemental autopsies, that the memory necessary for the utterance of words has for its substratum a circumscribed area in the posterior part of the third left frontal convolution, in right-handed persons. The conception of a center in the cortex for the localization of the memory of words heard in spoken language is due to the investigations of Wernicke and Mynert, the results of whose studies were published in 1874. The study of speech, thus commenced, was continued by Lichtheim, Kussmaul, Bastian, Mills, Starr and many others. These investigators have conclusively shown that the cerebral cortex contains areas which preside over the memories for the different processes of speech, and that if these areas become diseased, in part or in whole, the processes of speech over which they preside are crippled or wholly lost. In other words, the patient will forget how to talk as surely as though he had never learned the difficult art of speech.

Pathologic investigations, then, have shown that there are centers. some of which control uttered speech; others language which is received. For words may be either spoken or written; they may be either heard or seen. One of these centers for the control of speech is Broca's, situated in the posterior part of the third frontal convolution. Here is localized the memory for the effort needed to pronounce a word. In dealing with speech, let it be understood that we are dealing, first of all, with memory processes. If this center be destroyed, the kinesthetic memory for pronouncing a word is effaced, and the patient can not call to mind the feeling of the proper movements necessary for articulate speech. He may retain his mental faculties, for he can comprehend words; his vocal cords are not paralyzed, for he can make sounds and sing; but the memory for the feeling which guides the play of his delicate muscles of articulation is gone, and he is speechless, speechless but not wordless. Though he may receive language, he is utterly incapable, save by gestures, of giving it out.

Another center which presides over speech is situated in the first temporal convolution. Here are registered the memories for the meaning of words which are heard in spoken language. Words are associated in our minds with ideas and concepts, and so we understand their meaning. But if the center which controls the memory for the sound of words is destroyed by some pathologic process, though the patient hears the word, yet he is incapable of reviving its memory. It is as though he hears it for the first time. An unfamiliar foreign language would have just as much significance for such a person as does his mother tongue. To illustrate, if one is not familiar with the German word "Glocke," it significs nothing to him, but when he knows that "Glocke" means "bell" he at once recalls something that has been familiar to him since childhood. In imagination he sees and, above all, hears a bell. It may be some particular bell. He has associated the word with the object and its sound so long that now when the one is uttered he has no difficulty in reviving the memory of the others. Indeed, one is a natural sequence of the others. Perhaps the word "bell" recalls other words associated in memory with it, and he is reminded of Poe's poem of "The Bells." The person who has lost his auditory memories for words, however, may hear

the spoken word, but he can not associate the idea of the word as just heard with ideas of words previously heard, and he is in the same predicament as one listening for the first time to a word, say, in the Hottentot language. He may make his wants known in spontaneous speech, and he may be able to read and write, though not always. This auditory memory is the first of the speech memories to be developed, both genetically and phylogenetically—for the child learns to understand words long before it can speak them; and certain of the lower animals, as the dog, may have a limited vocabulary for heard words—it is the memory which is the most persistent throughout life, and the one which, when destroyed, causes the most serious disturbance in speech generally.

The two centers thus described have been, to a certainty, localized; there are two others, however, the location of which have been surmised, but not definitely established. As we not only speak words and hear words, but also see words and write words, so, hypothetically, there should be a center for the memory for the appearance of the word on the written or printed page, and a center for the memory for the movements necessary to write a word. Hence some have postulated centers in the cortex for these memories. There have been cases of people who have become unable to read written or printed language intelligently, and who at autopsy presented a lesion in the angular gyrus. It is probable, however. that the real cause of the disability in these cases was a lesion of the associated fibers connecting the centers for sight in the occipital lobes with the auditory speech center in the first temporal convolution, and that there is no distinct center which takes cognizance of written or printed symbols. Likewise, a center to control the memory for the movements concerned in writing a word does not appear to exist, according to most neurologists. Some, however, have localized it in the posterior part of the second frontal convolution, and some think that it is identical with Broca's center. In those people who use their motor memories when they write, as many do, for they have to pronounce the word to themselves before they can write it, a lesion destroying their memory for pronouncing a word will also destroy their memory for writing it. Hence, we find in practice that these two memories are generally destroyed together.

Such, then, are the centers which serve in a way that man has never been able to comprehend, for no one can tell the boundary between mind and matter, as the physical substrata for the memories of speech. But centers alone are not an adequate central mechanism for intelligent speech. The centers must be brought into connection with each other and with higher, or concept, centers before the mechanism is complete. For we can repeat what we hear, copy what we see, read what we have just written, and take cognizance of it all. Hence, anatomy tells us what psychology has postulated, that the different centers in heterogeneous parts of the cortex are connected together by fibers. These fibers in the aggregate constitute the centrum ovale or the white matter of the brain. They are the association fibers, the physical basis for the association of ideas. Connecting the two halves of the brain and constituting the corpus callosum are the commisural fibers, which serve to correlate the

processes going on in the two hemispheres. If there be a break in the continuity of any set of fibers connecting the different speech centers together, the faculty of language becomes deranged just as certainly as though the centers themselves were destroyed. For instance, if there be a lesion in the island of Reil, there will occur a disruption in the fibers connecting the auditory speech center with the motor speech center, and the patient will be unable to co-ordinate the memories of these two centers. He may understand the meaning of a word, for his auditory center is intact, and he can speak words in a certain automatic way, for his motor center is intact; but he can not pronounce after another words which he has just heard.

It is a eurious faet, and one that ean not be adequately explained, that in right-handed persons these speech eenters and their associations are localized in the cortex of the left hemisphere; while in people who are left handed they become established in the right brain. That they have become so localized and established is a fact which seems to point out a relation between speech and voluntary action. Let us assume, then, that most of our voluntary aets, as social beings, are intimately associated with expression of thought, be it exhibited by gesture or by articulate speech. As every action, in some degree, is an index to our states of feeling and willing within, so that side of the brain that is best fitted, by size and development, fer the control of the expression of these states, through voluntary action, would be the one which most readily develops centers and associations for speech. For when the child first attempts to make known its wants by a lisping word, and supplements that effort by a motion of its right hand, it is carving in its left eortex the associations between the processes which control voluntary movement, and the processes which control expression of its wants by gesture or by articulation. This seems to me to be a sufficient explanation for the association of the speech processes and the right-handed processes in the left cortex of the brain. That the child is originally right-handed and left-brained is a question which does not so much concern us here. If one were to philosophise, it might be observed that, given any two natural objects such as the hemispheres of the brain, it is quite unreasonable to suppose that they ever could be exactly the same in size and weight. This original inequality, producing, let us say, a left-brained and right-handed condition of the race, would then be propagated by heredity and eustom. We are, therefore, right-handed and left-brained by fortuity. But, after all, the best solution of the problem which has puzzled philosophers in all times is that we are made that way.

Normal speech is made up essentially of three processes: sensory, motor and associational processes. In other words, language is received, interpreted and uttered. The normal individual receives speech ordinarily through his senses of sight and hearing. The blind and deaf, like Laura Bridgeman and Helen Keller, get intelligence from the outer world only through their tactile and muscular senses. Sensations are the elements of all mental processes. Sensations received through the sense organs are united to form a percept, it may be a percept of an object or of its representative word. If the object which stimulates the perception

is removed from the cognizance of the sense organs, its memory-picture remains more or less clearly in the mind, as an idea. The idea of the object is associated with the idea of the word and forms a concept. When the word is heard or seen or felt, the idea which it represents is called to mind. Words, then, symbolize ideas. They are the pegs on which thought is hung. No one can engage in any form of protracted thinking without the use of words to crystallize and fix the terms of his syllogism. Nothing is really one's own unless he can tell it. Speech, like other operations of the nervous system, such as reflex and voluntary action, consists in this threefold process: sensation, association and motion.

In its receptive, interpretive and uttering attributes, speech is an intricate procedure, one which is partly physical and partly intellectual. This intricacy is increased by certain deviations from the common standard in the individual. Individuals present three different memory types, which apply as well for words as for ideas. It was Charcot who first applied these memory types to the verbal memory. There is, first, the visualizer, the person who interprets speech in terms of his visual memories. His memory for the words of a language is mainly a memory for the appearance of the printed or written page. The centers for this psychical act of visualization are in the occipital lobes of both hemispheres. The visualizer has no difficulty in learning by rote. Indeed, after the idea of the printed page is fixed in mind, he has simply to read off in his mind's eye the words as they appear in succession. He sees as distinctly as though the book were before him each word, phrase and sentence; the details of capitalization, punctuation and spacing; the bottom of one page and the top of another. On account of his clear image, the strong visualizer may even be able to repeat the poem he has learned, as well backward as forward. The visualizer has an apparent good command of language, language, however, that is not his own. It is clear that if the visual memory-pictures of the visualizer be destroyed almost his entire language is gone. Then, there is the person who uses his auditory-memory-pictures predominantly. To him the world is a world of sound. The one who is of the auditory type, in recalling a word, must think pre-eminently of its sound. One who has this memory strongly developed can easily repeat phrases and sentences that he has heard; indeed, his mind is stored with aphorisms and maxims, not read, but acquired through commerce with men. If through disease this type lose his memory for the sound of words, his vocabulary is irreparably curtailed. Still another person thinks of words in terms of his motor memory-pictures, so that in recalling a word he recalls the effort of its pronunciation. Now these different types of memory may be used independently or in various combinations by different individuals in the registering and recalling of words. has been shown that nearly half of all individuals are of the auditorymotor type, about 20 per cent. of the visual-motor type, about 15 per cent. of the auditory type, and about 7 per cent. of the pure motor type. It stands to reason, therefore, that as one or the other of these forms of memory predominate in different individuals, loss of certain centers will cause a hardly noticeable disorder of speech with one, while with another a severe disturbance or a complete loss of language will be the result.

Another factor to take into account in accurately localizing disease of the cortex by means of disordered speech is this: when the faculty of speech is abrogated from one hemisphere, the other hemisphere is quite likely in more or less degree, and especially with children, to take up the lost function. So that when the patient is seen for the first time in an advanced stage of the disease he may, by that time, have gained some considerable power of speech, due entirely to functional compensation. Hence, in order to make a correct topical diagnosis, it is important to have studied the case from its beginning, so as to be able to make allowance for this functional compensation. There is yet another consideration which might at first sight seem theoretical, but which rests to a certain extent on observation of fact. As one acquires a larger and larger vocabulary of words, it is reasonable to suppose that his speech areas increase in size and cover a larger and larger portion of his cortex. Now a circumscribed tumor which might cause complete loss of speech in an ignoramus would produce only a trivial disorder, or a stumbling of syllables, in one who originally possessed the vocabulary of a Shakespeare. So it makes a difference in diagnosing the size and position of a lesion whether the patient's vocabulary is composed of a few hundred words or is made up of 15,000. All these factors, trivial though they seem, must be taken into account in a critical study, and correct interpretation of the manifold symptoms constituting defective speech.

Such, in short, is an account of the processes of normal speech. They are so complicated and so inextricably bound up with higher or ideational processes that when one is disturbed all suffer, and even the higher operations of the intellect may be distorted. It was held by Max Müller, the philologist, that thought can not take place without words. Whether this be true or not, it is quite certain that if a person should lose all his memory-pictures for words, so that he could neither read nor write, speak nor understand, he would be almost, if not quite, a dement. It has been well said that intelligent speech distinguishes man from the brutes. We have said that the basis of language is a series of memory-pictures of the sound of the word, of the effort necessary to pronounce it, of the appearance of the written or printed symbols, and of the effort needed to produce these symbols in writing. We have said, also, that these four different memory-pictures, which together give us the idea of a word, have for their substrata certain definite centers in the cortex, together with their association fibers. Further, these memory-pictures are joined to the memorypictures which make up the concept. They are all so intimately connected that if one is lost all the others feel the effect, and a break in the mechanism leads to a defect in speech. This defective speech is called aphasia.

Corresponding with the sensory, motor and associational processes of normal speech there are three processes of abnormal speech. These are designated as sensory aphasia, motor aphasia and conduction aphasia. Sensory aphasia is a defective or lost receptive power of speech. It includes auditory aphasia, or word deafness, and visual aphasia, or a loss of the power to appreciate written symbols, figures and other conventional signs. The distinctive clinical feature of auditory aphasia is the inability of the patient to understand spoken language, though his sense

of hearing is good. As most people are strongly auditif, so when the center which is the basis for the memory for the sound of words is destroyed there is a considerable darangement also of voluntary speech. The patient can not think how words sound and so can not pronounce them. If in a patient with word deafness there is no accompanying word-blindness, he may be able to read, not only to himself, but to read aloud. In such a case the motor speech memory is aroused by way of the visual memories, without the intervention of the auditory memories. Such patients, too, may speak automatically those words which they have long been used to uttering without thought of how they sound. Sometimes auditory aphasia manifests itself in the utterance of words or syllables so mixed and jumbled up together as to be mere gibberish or jargon. Such a form of speech is known as paraphasia.

Connected with word deafness there is frequently an inability to understand the meaning of written or printed words, though the sense of sight is normal and the words are seen. Such an inability is called alexia. It is due to a lesion in the fibers connecting the auditory center in the first temporal convolution with the visual centers in the occipital lobes. The patient is then unable to write because his visualization is cut off and he can not remember how the words look. Alexia must not be confounded with mind-blindness, which is due to lesions in the visual centers themselves. A patient unable to comprehend written words may understand them if he trace them with his finger, his memory-pictures being awakened through his muscular sense. A patient with isolated alexia may be able to write, but it seems to him as though he were writing with his eyes closed, and, indeed, the writing has the appearance of having been done with closed eyes. Generally a person with alexia can not read what he had just written. Right hemianopsia frequently occurs with alexia

Conduction aphasia is a form of aphasia caused by a break in the continuity of certain of the association fibers connecting the speech centers together. The symptoms vary according to the set of fibers severed. If those connecting the auditory and motor speech centers be disrupted, the patient can understand words and he can speak a few words spontaneously, but as the coördination between these two centers is destroyed he can not repeat after another what the other had just said. If he attempts to do so his speech is jargon. There are different degrees of this paraphasia. There may be simply a tendency for the wrong word to slip out now and then. A patient, speaking of pills, said that he had taken potatoes. Sometimes the patient can not recollect a certain word. He may then make use of a periphrasis to get around the difficulty, using the word "thing" to supply the missing word. Sometimes there is a stumbling of syllables (silbenstolpern of Kussmaul). Bastian mentions the case of a distinguished professor who was constantly making ludicrous blunders. He would say "cus porcuscles" for "pus corpuscles." Starr relates the history of a person who would say "five of telephone" for "four of spades." A patient of mine, after recovering from an attack of apoplexy, would say "flesurable" for "pleasurable," "beutriful" for "beautiful," etc., and sometimes he was unable to recall the word at all. Sometimes the patient makes use of actual words, but they are so collocated that his speech is unintelligible. In extreme forms there is a mere jabber of meaningless sounds. In rare eases the paraphasia is only transient. A senile patient of mine became suddenly paraphasiac, without any other symptom. He talked at great length in a gibberish composed of transposed syllables, wholly unintelligible. He seemed to think that he was talking sense and he could understand what was said to him. In a few days his speech was normal. Expressing ideas in words is such a familiar process and is so bound up with our other faculties that we do not realize its importance until the power of speech is thus deranged. And then it seems to us almost as though the patient were demented.

The following interesting case is a good illustration of paraphasia and paragraphia. Dr. Marcus Whiting, whose ease it is, has kindly allowed me to study it. The patient is a woman, 66 years of age, teacher of vocal music, intelligent, right-handed. Two or three weeks ago, while playing at eards, she suddenly complained of "feeling so funny," became hemiplegie on the right side, and it was also noticed that she had lost the ability to properly express herself in words. She did not lose consciousness. The hemiplegia was slight and transient; the next morning she could walk, and the grip of the right hand equaled that of the left. The sight and hearing are good, there is no hemianopsia, she seems in good spirits and can sleep and eat well. There is no valvular disease of the heart, but its rhythm is disturbed. The main symptom complained of at the present time is her defeet in speech, which is characterized by an unintelligible jumble or jargon of words when she attempts to make known her wants. At first sight one might take her to be demented, but upon eloser examination one finds that she can understand the meaning of every word that is said to her, and she can associate words with their proper ideas. That she can comprehend the meaning of words shows that the eenter in the first left temporal convolution is intact. That she can talk in her peculiar way, and even utters a few spontaneous expressions to which she has long used, such as "Good morning," "Call again." etc., proves that she is not a motor aphasiac. The trouble is that she can not eoördinate the idea of the word heard with the idea of the spoken word, and so she talks jargon. As to reading, she appears to enjoy the newspapers, but whether she really gets the import of what she reads is questionable. When commanded in writing to perform a certain act, as to take off her glasses, she seems to recognize the words, that is, can read them to herself, but she fails to eomprehend their meaning. It is not until she hears the spoken eommand that she understands and obeys. She therefore has alexia. When she attempts to write she produces an unintelligible serawl. She ean not even write her name. She ean eopy with difficulty. In her case it is the lack of the memory of the appearance of a word that prevents her from writing with freedom. She ean sing a familiar song correctly, the tune carrying with it a number of words. As before her attack she eould play the piane, it will be interesting to note whether she can still do so when she gets up and around. She ean draw whatever she is told to. She ean repeat some words, but not all, after another person. Thus it may be seen that she has absolutely no way of making her wants known,

save by gestures and a few automatic expressions. She can receive spoken language, but can not communicate language. In this case the lesion would seem to be an embolus plugging the main branch of the left middle cerebral artery, and so cutting off the nutrition of not one particular word center, as would be the case if only one of its branches were occluded, but of the different centers and associations quite extensively. One might in passing call attention to the medicolegal aspect of such a case as this. The peculiarity of speech makes the patient appear insane. Indeed, cases of aphasia have been tried in the courts as to their testamentary capacity, etc. This woman could not affix her name to any legal document. But as her ideational processes are undisturbed she has what the lawyers call a disposing mind.*

The remaining form of abnormal speech is known as motor aphasia, When a lesion destroys Broca's center, although the vocal cords are not paralyzed and although the processes of thought are not interfered with, vet the patient has lost his ability to convey his ideas by means of spoken words. This condition is called aphemia. In such a case the faculty for reading may also be disturbed, the disturbance depending upon the extent to which the patient uses his motor processes to interpret visual symbols. With some visual symbols arouse ideas directly; extensive disease of the motor centers may not destroy their ability to read. With others visual symbols arouse ideas only by energizing their motor structures; such is the case with those uneducated people who move their lips when they read to themselves. With most motor aphasiacs the faculty for spontaneous writing is destroyed, even though the hand be not paralyzed—a condition known as agraphia. Wernicke thinks that writing is the act of tracing the visual word memories. Exner thinks that there is a center for writing in the second frontal convolutions adjoining the center for the hand. As agraphia occurs so frequently with motor aphasia, Broca and others have thought that the motor speech center might also control the memory for the movements necessary for writing. And this, on the whole, seems the most plausible conclusion. Motor aphasia is generally associated with right hemiplegia.

Some years ago I had under observation a patient presenting the following symptoms: He was 33 years of age, right-handed. For twenty years he had been in poor health, having suffered from palpitation of the heart. Two years previous to my examination of him he was suddenly seized with an attack in which he lost consciousness completely and remained unconscious for two weeks. When he regained his senses it was found that he could neither speak nor write, and that he was completely paralyzed on his right side. Since the attack he had epileptic fits, recurring about every two to three weeks. His mind, which had been impaired by the insult of the attack, had gradually improved till the time of the

^{*}This woman can now, two months after the beginning of her attack, engage in fair conversation. One listening to her for the first time could not readily detect any aphasia. Now and then she must search for a word, and in her search she is helped by closing her eyes and recalling the appearance of the written or printed symbol. It was amusing on one occasion, when she wished to say the word "six" to see her turn around and look at the figure on the clock before she could pronounce the word. She can now write the letters of the alphabet, the numerals, and her name, but nothing more. She reads and understands almost everything, and can play the piano with freedom.

examination. I found a man of robust build, good nutrition and whe irregular in rhythm, and there was a loud murmur. He was still hemifelt pretty well, except after his fits of epilepsy. His heart, however, was plegic, but had gained the use of his leg to a certain extent, so that he could walk. The most distinctive feature of his case, however, was his aphasia. He could say no words except "yes" and "no," "Maggie" and "Walter," the names of his children, and "damn," which latter expression he used on all occasions. He could write nothing except his name, writing the surname and first two initials correctly, but spelling the given name "Edward" as "Edrard" or "Edrawd" or "Edrw." He could understand perfectly all that was said to him and could read, though reading was difficult work for him. He could understand gestures and could also make gestures in return. As, therefore, his receptive power of language was good and his uttering power gone, he had motor aphasia. Testing him further, it was found that he could recognize objects seen, heard, felt, tasted and smelled, therefore he had no apraxia or mind blindness. He could call to mind the idea for the name of an object. When I wrote the word "cat" he knew its meaning, and when asked what kind of a noise the cat makes he said, "Meow." He could remember events that occurred before his attack. He could play at dominoes and cards. If shown money he could tell how much. If commanded in writing to do something he could only read simple sentences. He could copy written words correctly, but could not copy written words from their printed symbols. He could not write letters. He could not name letters after tracing them with his fingers. He could write his age correctly. He could write the numerals up to 10. He could add simple sums, but could not subtract, multiply or divide. He could understand musical tunes and could whistle. In singing a song the tune carried along with it the memory of a few words. If told to draw the picture of a tree or the profile of a face he could do so. Later he could name the numerals to 10 and could name a few printed letters. He also learned a few words. His mental powers, however, gradually failed till the time of his death. This resulted from his heart affection about four years after his attack. His was a case of pure motor aphasia, caused by an embolus from the diseased heart. Although there was no autopsy allowed, I feel sure that the lesion in this case was a focus of softening in the posterior part of the third left frontal convolution.

Passing over the consideration of the etiology, prognosis, etc., of aphasia, let us consider now one aspect of its treatment. First of all, it should be noted that the cortical areas concerned in speech are very accessible to the technic of the surgeon, and he is often able to remove the subdural clot, or tumor, which by pressure is destroying the faculty of speech. After the cause which produces the disordered speech is removed, however, the main treatment should be one of systematic teaching. And here the physician may well turn pedagogue. I have long thought that the aphasiac should be taught to reacquire his lost art in much the same way as the child is taught at school, or maybe as the blind and deaf are taught in their proper institutions. Indeed, it might be a good plan to have schools in connection with sanitaria in which to reëducate patients suffering from

certain nervous diseases, such as aphasia in its various forms, hysteria, locomotor ataxia, epilepsy, idiocy even, etc. For nervous tissue is very receptive to impressions, and though the function of one center with its associations be destroyed, other centers and associations may possess a compensatory potentiality. If a speech center in the left hemisphere be destroyed, its analogue in the right hemisphere may be educated. The schools to which I refer should be in charge of those trained for the particular duties of educating people with missing faculties. They should know through what avenues and in what way to best reach the nervous matter whose function will supply that which is lost. Of course, the sensory aphasiac would be the one most difficult to instruct, because his inroads to knowledge are impaired. Indeed, he is in quite the same predicament as are the blind and deaf; the only difference is that instead of the eye and ear being impervious to perceptions, the eye and ear centers for words are incapable of receiving and registering their memory. Persons of this class might be helped to acquire a considerable power of speech through their tactile and muscular senses. It was in this way that Laura Bridgeman and Helen Keller acquired their symbolization of ideas. Certain aphasiacs might be taught the art of lip reading. To teach the aphasiac would not be such a difficult task as to teach the blind and deaf, because the former has certain memories to start with, the loss being for words, not for ideas; the latter have never had their memories aroused. In any case, however, where the speech centers are completely abrogated the process of reëducation is a tedious one. The patient learns to talk in much the same manner as does the child in learning its mother-tongue; indeed, the words are pronounced just as inarticulately. aphasiac were intelligent and used to acquiring knowledge before his attack I believe that much might be done by this process of reëducation. Learning to use the left hand helps to develop and educate the right brain, and this the aphasiac should unremittingly attempt to do.

Defects in speech are important localizing symptoms, but they must be taken in conjunction with other localizing symptoms, as paralyses, spasms of groups of muscles, disturbances of sensation, etc., in order to definitely localize cortical and subcortical disease. Our knowledge of certain forms of aphasia is not, as yet, complete. As the organ of the mind is inaccessible to direct examination, its disorders can be investigated indirectly only, by means of the instrument of deduction; but deduction, with legitimate premises, is an efficient instrument. Before, however, we can make use of deduction in any particular case we must first have built up our general conclusions derived from a number of cases. Before the diagnosis must come the specific law of causation obtained from observation and analysis of particular instances. Careful clinical studies, then, must be supplemented by appropriate autopsies. This process of generalization, in the case of speech, is a tedious one, because Nature does not make experiments with speech every day. But it is the only method which allows of the diagnosis of cortical disease from peripheral symptoms, the only method by which the complicated interrelations of the manifold processes of defective speech can be unraveled and understood.

CONSIDERATIONS ON NEURASTHENIA.*

JULIUS GRINKER, M.D.

CHICAGO.

Professor of Nervous and Mental Diseases, Chicago Post-Graduate Medical School; Assistant Professor of Clinical Neurology in Northwestern University Medical School; Neurologist to Cook County Hospital, Chicago.

Despite the faet that neurasthenia, elinically, is one of the best known subjects in medicine, many general practitioners have but hazy notions regarding its clinical manifestations. Just as every obscure nervous eondition in a woman was formerly called hysteria, so now every unclassified mental or nervous disease is called neurasthenia if the patient is a man. The statement can not be reiterated often enough that neurasthenia may occur in man, woman or child. It is a well-defined diseased condition and not difficult of recognition if the essential symptoms are once thoroughly grasped. Contrary to the opinion of some who pose as speeialists in the public press, I will state that there is nothing modern or American about the disease except the name, which was given it by an American in modern times. Clifford Albutt well says that neurasthenia. in eommon with insanity and epilepsy, undoubtedly existed in all ages, but, unlike the sufferers from the two latter diseases, which had somewhat of a sacred character and thus enjoyed a certain protection, neurasthenic persons were harshly thrust aside and escaped even medical recognition. Each day convinces me that neurasthenia can not lay claim to being a fashionable disease; it is found in the palace and in the hovel, among the intellectual and among the ignorant; it affects equally the indolent and the overworked.

At the outset permit me to state that I have peculiar notions of what eonstitutes neurasthenia. I will begin by eliminating certain diseased eonditions which, in my opinion, do not belong to neurasthenia, though they may produce symptoms resembling those of neurasthenia. It is well known that phthisis, ehlorosis, anemia, toxemias due to infections or metallie poisoning, drug habits, etc., produce among other symptoms such as might easily be eonfounded with those of neurasthenia. Further, it would be marvelous if an organic nervous disease which weakens the entire organism should fail to produce nervous debility. This, however, is not neurasthenia, but merely symptomatic of some other underlying condition. In this connection I recall the case of an old lady who consulted me for numerous neurasthenic symptoms, which were found upon a routine examination to be the expression of tabes dorsalis, the existence of which her former attendants failed to recognize. Instances are numerous in which neurasthenia is made to cover a multitude of sins, apart from the fashionable interchange of the term neurasthenia for hysteria, because the latter smaeks of simulation and "maladie imaginaire." Then there is a class of so-called neurasthenies who are really sufferers from some polvic disease which remains unrecognized. These I would also exclude from the category of true neurasthenia. Pelvic discase may undoubtedly mimie true ncurasthenia. There is pain referred to the back, hips and thighs, together with more or less marked impair-

^{*} Read before the South Side Branch of the Chicago Medical Society, March, 1906.

ment of general health. But these symptoms are characteristic of pelvic disease and do not constitute neurasthenia. While until recently the gync-cologists, with their minds centered on the abdominal brain, considered every owner of a uterus and adnexa the legitimate subject for castration, provided there was any ache anywhere in the body, the pendulum has now swung to the opposite extreme, and sometimes genuine pelvic disease is mistaken for hysteria or neurasthenia.

I would also separate from simple neurasthenia the conditions resulting from disordered metabolism and the effects upon the nervous system of cardiovascular changes, notably arteriosclerosis. These varieties might be called neurasthenia symptomatica. Under no circumstances ought we to include under neurasthenia the various forms of hereditary neuropathy that evenuate in well-defined neurosis or psychosis and those conditions which are already rudimentary psychoses and neuroses, but can not be put into a classified type. These forms of nervous disease have only a superficial resemblance to true neurasthenia, and I can not agree with those who describe them as constitutional or congenital neurasthenia. And, lastly, we hear of patients who have passed from neurasthenia into hypochondria or melancholia. As a matter of fact, neurasthenia never eventuates in mental disease. All the preceding nervous conditions are properly called neurasthenoid states, as Dercum suggests. They are not neurasthenia proper and should not be classed with it.

Symptomatology.—Neurasthenia is essentially a condition of chronic fatigue. We are all familiar with acute fatigue coming on after overwork, either mental or physical, when the muscles feel as though they were bruised and beaten, when appetite is gone and a slight noise sounds like thunder, when the letters dance on the printed page, when our child's company is distasteful and when even sleep becomes fitful, accompanied by sudden starts and jumps or dreadful dreams. Imagine such a state to become continuous and you have a fair description of neurasthenia. The neurasthenic is always tired, lacks energy, is irritable and has the multitudinous local and general aches of chronic fatigue. Circulatory and gastrointestinal derangements characteristic of impaired nervous energy are usual complaints. These are the symptoms of fatigue and may be called primary as opposed to another set of symptoms, the so-called secondary symptoms, such as dizziness, throbbing in the head or tremblings in limbs, ringing in ears and various other strange sensations.

Most of the symptoms of neurasthenia are expressions of weakness and irritability. Unlike hysteria, there is never a minus, such as paralysis, or a plus, such as convulsions for the motor tracts, nor is there a minus, such as anesthesia, nor a plus, such as hyperesthesia for the sensory sphere, but there is perversion or reduction of power and sensation. This myasthenia is usually pronounced, as can be tested by the grip of the hand; walking tires the patient readily. The weakness, however, is general. Should there appear decided local weakness, we have to deal with either organic disease, hysteria or an occupation neurosis. Muscular tremor is often seen, which is either general or limited to the hands or the orbicularis palpebrarum. The weakness is considered a primary symptom, while the tremor and twitchings are classed among the secondary or adventitious

signs. When the patellar tendon is struck we usually find a ready and exaggerated response, but this weakens considerably after it has been struck a few times in succession, showing irritability and weakness.

In the sensory sphere the patient has a peculiar feeling of general fatigue, as though his museles had been bruised and flogged. A sense of lightness or constriction about the head, giddiness and vertigo made worse by postural change, are often mentioned. The multitude of pains deseribed by the patient prove on close inquiry to be no pains at all, but merely uncomfortable sensations, paresthesias. Among these may be reekoned the various sensations in the head, the so-ealled headaches of neurasthenia. The patient describes the headache as either a fullness or a feeling of emptiness in the head, or he feels as though his brain is about to explode or be erushed. The lead-eap sensation passing around the base of the brain is a common form of paresthesia. Similarly, patients complain of backache and limbache, which are mostly dull in character and diffuse in location; of paresthesias, such as needles and pins, tingling and numbness in fingers and toes. The oft-mentioned spinal tenderness eonsists in the patient experiencing pain over the spinous processes, either spontaneously or after passing the finger lightly over the spine.

The special senses are prone to develop fatigue symptoms. The patient states that after reading for a few minutes the letters appear blurred, or ordinary objects may appear excessively large or very small. The auditory apparatus in some eases participates in the general fatigue; there may be tinnitus or hypersensitiveness to sounds or even reduction of hearing.

Psychie disturbances are rarely absent in eases of neurasthenia. The patient shows lack of concentration and incapacity for sustained mental effort. There is marked reduction of spontaneity of thought, lack of eonfidence and indecision. Introspection or the looking within for new hypoehondriacal symptoms and hypoehondriaeal ideas may be very obstinate accompaniments. The psychie condition is probably only a result of somatic processes. The brain, receiving impressions from all parts of the body of fatigue, flaceidity or retardation of function, reacts with sensation of fear, sadness, worry, indeeision, indolence, apathy. There may be a vague sense of fear or there may be regular attacks of fear, during which the patient becomes pale, is bathed with perspiration, pants for breath and sinks exhausted into a chair. Certain special fears are also noted in thisdisease, such as the fear of open spaces, agoraphobia; the fear of closed places, elaustrophobia; the fear of being alone, monophobia; the fear of crowds, anthrophobia. The special fears more properly belong to the neurasthenoid states, as patients affected by them are in reality neuropaths.

Sleep disorders are common in neurasthenia. Patients may experience-peculiar sensations just before falling asleep, or they may be awakened from their sleep by a feeling of oppression in the ehest, palpitation of the heart, general tremblings and fear; or, having slept fairly well, they awaken with a feeling of helplessness; they are unable to open the eyes or move a limb until after a few minutes, when power gradually returns. Distressing dreams, a feeling of weight on the chest, are found among neurasthenies as well as among other nervous patients. Insomnia, partial or complete, is a frequent complaint. A patient may readily fall asleep.

but wakes after two or three hours and tosses in bcd till morning without having found the great restorer.

The viseeral disturbances commonly found in neurasthenia are also phenomena indicative of chronic fatigue. The digestive disturbances are primarily those of weakness of motility and secretion, which eause delayed digestion and may even be complicated by a gastrie catarrh. A marked deficiency of hydrochloric acid, the so-ealled achlorhydria, is not rarely seen in neurasthenia. This finding, recently observed in a member of my family, has eaused me not a little anxiety; the possibility of gastrie eareinoma was scriously entertained by myself and a very eminent internist, until a course of treatment for neurasthenia eventuated in recovery and ineidentally made the diagnosis. Such patients suffer from anorexia, emaciate rapidly and may suffer gastrie pain, and if in addition an absence of HCl and dilated stomach be found we are contemplating the picture of eareinoma. Only repeated and eareful observation of symptoms can enable one to make a correct differential diagnosis. Instead of aehlorhydria we may have the troublesome condition of hyperehlorhydria and so-ealled dyspepsia nervosa.

The circulatory apparatus in neurasthenia shows the same irritable weakness observed in other organs. The force, rhythm, character and frequency of the pulse may be changed. Palpitation of the heart or persistent tachycardia may become troublesome. Coldness of the extremities and sometimes lividity is observed. Aortic pulsation, powerful enough to be mistaken for aneurism, is not rare. The vasomotor apparatus betrays its weakness in local pallor and frequent flushings from insufficient causes. The glandular organs may show perversion of function in the form of sweats, polyuria, hyper- or hypo-secretion of gastric juice, mucous discharges from rectum or, what is an almost constant symptom in neurasthenia, constipation.

In certain individuals weakness and irritability in the sexual sphere may be so pronounced as to overshadow all other symptoms of the disease and the name sexual neurasthenia has been applied to this condition. In such patients there is either sexual hyperesthesia or dysesthesia. The loss of desire for normal intercourse leads to the fear of impotence, the so-ealled psychie impotence. It is in these eases with weakened normal psychie processes that new and abnormal sexual thoughts, the so-ealled perverse sexual feelings, struggle for recognition. And because they are not connected with the usual distaste for normal intercourse, onanism, Masoehism, fetiehism, exhibitionism and other perversities are oeeasionally practiced by the sexual neurasthenic. In justice to the sufferer from neurasthenia it must be stated that the true sexual pervert is not of his elass, but a born psychopath. The most troublesome complaint of the sexual neurasthenie is sexual weakness and irritability; there are frequent seminal losses, premature ejaculation and great exhaustion following coitus.

What causes neurasthenia? In general terms we may state that overwork and nervous overstrain, worry, sexual excesses and abuse of stimulants are productive of neurasthenic states. It is not probable that a naturally strong organism will break down under slight stress. The ex-

citing causes must operate very strongly in order to produce such a result. On the other hand there are constitutions endowed with small powers of resistance, in whom insignificant causes suffice to produce nervous breakdowns. The last class is usually the offspring of parents weakened by disease, such as tuberculosis, syphilis, gout or neurasthenia. Distinct neuropathy and psychopathy are but rarely found in the ancestry of neurasthenic patients, while these are common in the ancestry of those affected with insanity, hysteria and the neurasthenoid states. It is a fact, with but few exceptions, that work alone does not cause neurasthenia, but it is the worry that often goes with it. The successful man in business, politics or finance seldom becomes a prey to neurasthenia, but it is the man who has staked his all on a venture and lost, or the man who has suddenly taken on the habits of the elite after having spent years of usefulness in a lower station of life who is apt to land in a sanatorium for nervous invalids.

Pathogenesis.—I intend to regale you with pure theory regarding the pathology of the great fatigue neurosis. Although we have no pathologic anatomy of neurasthenia, vet we have certain notions on the subject gained from animal experimentation and from speculative reasoning. The experiments of Hodge, who caused fatigue in various animals and then examined their nerve cells with the modern methods of staining, have now become famous and lead us to infer similar findings in the cells of neurasthenics. As the true nature of neurasthenia is still a matter of speculation, I might be permitted to quote the following pretty explanation of neuronic activity and exhaustion taken from Dr. H. H. Hoppe's article on hysteric stigmata in the February Journal of Nervous and Mental Diseases: "We know that the neurone reacts to external stimuli in two ways, which are opposed to each other. In the first place, stimulation of a neurone produces external manifestations of neuronic activity, which show themselves in muscular contraction, heat production, secretion, etc. In the second place, stimulation affects the neurone in such a way as to limit or curtail the energy produced. These effects are respectively known as the conducting and the inhibitory activity. Both of these activities are dependent upon definite biochemical and biomechanical activity. Verworn holds that the protoplasm of the ganglionic cell consists of numerous living molecules of albumin, which are constantly performing either positive or negative molecular work and sometimes one and sometimes the other predominates. The positive molecular activity manifests itself in an oxidation process, viz., the using up of the protoplasmic molecules in the production of the specific impulse of the cell. The negative molecular action is one of assimilation, a synthetic process, namely, the building up of the complex chemical molecules of the neurone.

"Fatigue and exhaustion result from an excessive positive molecular activity, recuperation from an excess of negative molecular activity. Usually a neurone is at the same time under the influence of both stimuli. Its activity shows itself either in the nature of urging on or increasing an impulse which is already generated, or in diminishing the force of such an impulse. The collision of two impulses in the same

neurone is called "the interference of the stimuli." The circumstances which determine the result of such an interference, whether there shall be an increase or a diminution of activity, depends upon the condition of the neurone. In a normal condition of the neurone the result of such an interference is usually inhibition; in an exhausted neurone there is usually an increase of irritability or activity. The manifestations of a normal neuronic activity are always, therefore, somewhat inhibited.

"Abnormal neuronic activity may either show itself in the form of an explosion or its activity may be entirely absent, due either to a complete exhaustion caused by a want of working capacity, or it may result from complete inhibition due to the excessive manifestation of the 'interference of stimuli.' Wundt says that in every central neurone we must distinguish physiologically between a central zone and a peripheral zone of the cell. The central zone (nucleus) is the seat of negative molecular activity, viz., anabolism, and the peripheral zone is the seat of positive molecular activity, viz., katabolism. Any stimulus reaching the central zone increases the negative molecular activity, which is inhibitory in character, and causes this activity to overflow the peripheral zone; and, vice versa, any stimulus acting upon the periphery of the zone increases positive molecular activity, which produces increased activity and causes it to spread over the central zone."

Though the foregoing theory itself needs explanation, yet it seems to explain our usual treatment of neurasthenia in a most plausible manner.

Treatment.—As regards prophylaxis, we should endeavor to live with reason, to avoid excitement, worry and overwork; especially should we exercise good judgment in the selection of a vocation for one with a tendency to neurasthenia. The marriage of two neurasthenics is almost sure to result in a multiplication of neurasthenia; such marriages should, therefore, be frowned upon. We are very careful in the breeding of animals and progeny is a vital question with us, but we never have a care in the breeding of the human animal and go on producing an inferior race. Consanguineous marriages should be discouraged, and sexual excesses, both intra- and extra-marital, should be strictly interdicted. The therapy for the developed disease will aim at searching out the various causes that may have contributed toward the production of the condition with the view of preventing further recurrence. Mental or physical labor must be limited to a minimum, even if a change of occupation should become necessary. The proper proportions between work and play should be strictly maintained. Starting from the assumption that the nerve cell in some of its parts is exhausted, it seems logical to advocate rest as a therapcutic measure. Experience has proved the wisdom of the rest cure as inaugurated by our great American neurologist. If the disease itself was not born on American soil, its successful treatment certainly was. The Weir-Mitchell rest curc in some of its modifications has become the recognized treatment for the various types of simple neurasthenia the world over. Its essential features are isolation, absolute rest, diet, massage, electricity and the personal influence of a good nurse. It is unnecessary to dilate upon the various details of the rest cure, as the physician usually leaves their proper execution to the trained assistants of the various sanatoria. However, we are often compelled to treat neurasthenics at home, and here we must institute some form of rest cure to meet the requirements of each case. We may advise the patient to sleep longer in the morning, to exercise some and to drink milk and eat raw eggs after meals and, somewhat later, between meals. In addition he is to be told to take short walks, to rest after meals, not to read exciting literature, to retire early, to abstain from alcohol, tobacco and sexual indulgence.

As regards symptoms, constipation must be treated by abdominal massage, the drinking of sufficient water and, if of long standing, cascara should be administered in small doses, say 15 to 30 minims of the fluid extract three times daily. An occasional calomel purge is beneficial. Sodium phosphate in dram doses three times daily is often followed by good results. Strychnin does not seem to agree with neurasthenics; it has a tendency to cause unrest. I prefer the bromids and particularly the sodium salt. It must be noted that of all the drugs used in neurasthenia the bromids give us the best results. The usual dose is 15 grains three times daily after meals.

As the effects of bromids are considered sedative for nerve cells, it would seem as though the depressant and sedative effects were exercised on the hypothetical positive or peripheral zone of the cell, while the negative central zone is recuperating, storing up energy. I will say what I have often said to my students: when the patient is unable or unwilling to take a real rest cure, it is our duty to give him an artificial rest cure, and for this nothing is better than the administration of bromid. I also desire to emphasize that while the neurasthenic is not to be classed with the psychopath or hysteric, combinations may exist. Even were this not so, there is a psychic element of introspection and the tendency to magnify the importance of symptoms must be combated by appropriate psychic treatment. Whether we use suggestion or persuasion in addition to building up the exhausted neurones is immaterial. Of course, you are all familiar with the fact that a thorough examination of the patient and a frank statement that there is no organic disease present is in itself a helpful suggestion. It is, perhaps, needless for me to repeat that to ridicule or poke fun at your patient by telling him that he only imagines the disease only irritates an already hypersensitive individual. In conclusion. I wish to say that when neurasthenia is properly managed it ceases to be the dreaded specter of the practitioner, but becomes rather his welcome friend, for it brings practice and reputation.

PARAMETRITIS (VIRCHOW) VERSUS PERIMETRITIS— BEHAVIOR, DIAGNOSIS AND TREATMENT.*

A. Belcham Keyes, M.D.

Instructor in Gynecology and Obstetrics, Rush Medical College, in affiliation with the University of Chicago. Professor of Gynecology, Chicago Polyclinic. Gynecologist to the Polyclinic, Chicago Maternity, and Deaconess Hospitals.

CHICAGO.

The two pelvic diseases, parametritis and perimetritis, are so often confused, the one with the other, that we must always carefully bear in mind the anatomic location and behavior of the former, together with its

^{*} Read before the North Side Branch of the Chicago Medical Society.

peculiar clinical symptoms and objective signs. This care is very necessary because of the close proximity of the tissues to other tissues even more frequently implicated and especially in deciding the route and method of operating and draining, which differ widely, viz.: the parametric, via the vagina almost exclusively, the perimetric by the vagina or by the anterior abdominal route, or by both, according to conditions.

Before proceeding I ought to mention that Osiander in 1771 considered these to be psoas abscesses, and even went so far as to point out the frequency of psoas abscess in childbed. Dupuytren and Grisolle considerations

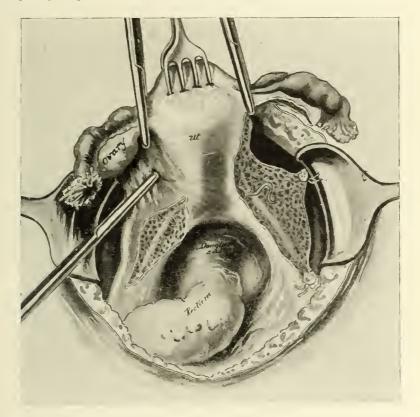


Fig. 1.—Incisions in the normal broad ligaments, exposing the loose parametrium in a case of pyosalpinx (Doederlin).

ered them of paratyphilitic origin. In 1862 Virchow demonstrated the site and origin in the morgue and named it parametritis. In 1869 Duncan gave a correct description of what he termed pelvic phlegmon. In 1886 Freund's classical paper placed the disease of the polvic connective tissue in its proper place among the pelvic lesions.

PARAMETRITIS.

This is the term that should be used solely to designate an inflammation of the parametrium, i. e., the subperitoneal pelvic connective tissue which surrounds the uterus, as it lies in the pelvis underneath the pelvic folds of the peritoneum. This loose connective tissue begins anteriorly in the cavum Retzii, just above the pubis, then passes around the bladder (paracystium), uniting it to the cervix and vagina, then around the lower half of the uterus, especially laterally and up between the leaves of the broad ligaments, for about their lower half (parametrium), and from the level of the internal os bordering laterally and under Douglas' sac to and around the rectum (paraproctium), thence upward to behind the sigmoid romanum on the left. On the right side it passes up behind the cecum and appendix (Korte's space). On both sides, extending up as high as the kidneys (paranephrium), it lines the whole of the region extraperitoneal, or so-called preperitoneal in front, subperitoneal below and left and right retroperitoneal behind.

The looseness and mobility of this tissue normally allows of the easy varying of the position and size of all the pelvic organs, and is very essential when we consider the frequently marked fecal distention of the rectum and consequent displacement of the cervix anteriorly before defecation, the enormous enlargement of the uterus in pregnancy and the filling, often distension, of the bladder, retroverting the uterus, before urination.

This connective tissue, together with the blood vessels and nerves and the pelvic folds of the peritoneum above it, enters into the formation of the so-called uterine ligaments—uterovesical, round, broad, and uterosacral—each of which has more or less smooth muscle fiber, derived from the external longitudinal layer of the utcrine wall, adding to its contractility, which assists in restoring the organs again to their normal position after each physiologic displacement. These so-called uterine ligaments undergo hyperplasia and hypertrophy during pregnancy and involution again after labor is over.

O. Busse, of Greifswald, considers the histologic examination of the parametrium much neglected and states that most writers are still satisfied, even to-day, by quoting Virchow's ideas as given in 1862. He states further that Bichat's experiments by the injection of air and water demonstrated the very great importance of this loose connective tissue in the lower animals and the human and that fluid did not simply burrow by purely mechanical laws, but followed certain layers, and further mentions that Koenig tried these same experiments on puerperal women, dead of some disease other than puerperal fever. Schlesinger used a solution of the consistency of pus and believed, by a series of injections in various places, to be able to give the site of the atrium of the entrance of the infection by the method of the spreading of the pus in the parametrium. These injections were repeated by Rosthorn, Snegireff, Goubaroff and Jung. The latter considered the worth of these experiments as solely teaching of pelvic topographical conditions, i. e., the large connective tissue spaces and the loosely united parametric tissue and resisting septa. Busse says these experiments do not teach all of the process, because the bacteria and toxins spread at first via the preformed blood and lymph spaces, and only eventually lead to infiltration and the formation of pus. He states that there is, firstly, an inflammatory edema, then coagulation

and the formation of fibrinous material, much like that described by Grawitz in peritonitis, later a breaking down of the tissue, and fat metamorphosis of the smooth muscle fibers of the parametrium. Free pus in any quantity in the parametrium can naturally burrow in the direction of least resistance, the direction depending on the original site of pus formation.

The cause of purperal infection is undoubtedly always contact infection before, during or after labor or abortion, by coitus, digital examinations or operations or imperfectly applied purperal napkin, especially when the cervix lies close to the vulva or even protrudes, which it often does for the first one to three days after labor is over.

H. M. Little states that Walthard found the uterus sterile in 10 unexamined cases and in 10 cases that had had digital examinations during labor bacteria were found present in 7 of them. The teachings of Doederlein of the self-protecting power of the healthy acid vaginal secretion have been confirmed by the very recent exhaustive experiments by Natvig, who states: "Bengelsdorff found the vaginal sccretion at birth acid or it became acid soon after birth, while still free from bacteria. Acidity is not necessarily due to Doederlein's vaginal (leptothrix-like) bacillus, but this latter grew naturally in the acid vagina and also generated more acid. Streptococci and parapneumococci do not thrive well in the acid vagina, because of their low toleration of acidity. He considers that Doederlein's bacillus, therefore, was not the sole agent in vaginal autoantisepsis. That the whole vagina from the vulva upward was protected by the acid secretion he considered true; that the "show" lessened this protective power, as did also the lochia, by lessening the acidity; as did also any excessive blenorrheal discharge, which fact is also confirmed clinically, for Kaltenbach and Bumm both noticed that women with parametric infection very frequently infected their children with ophthalmia neonati gonorrhoica.

That streptococci are the most frequent cause (Pfannenstiel Jung) of parametric abscess seems to be the general conclusion from bacteriologic examination, yet it must not be forgotten that staphylococci, pneumococci, bacilli coli, influenza and even the Klebs-Loeffler bacilli are on record as being found.

The cause of parametritis may, then, clinically be said to be due to a lack of surgical cleanliness in labor or abortion and the gaining access of infecting micro-organisms, especially streptococci, before, during or after:

(1) Abortion, or term labor, or operation (dilatation, curettage, etc.), resulting in the opening of an atrium through which infection can pass to the parametrium.

(a) By incomplete tears of the cervix and infection invading the

parametrium via the open lymphatics.

(b) By complete tears in the cervix that extend entirely into the (paracervical) parametrium at the base of the broad ligament laterally or latero-posteriorly or less often anteriorly, allowing the infection to occur direct. Especially may these tears be extensive in primiparæ with rigidity of the external os or due to the misuse of ergot or the very common

premature application of forceps. Bernutz found 35 cases after term labor to one after abortion. Tears extending through the vaginal fornix

naturally give the same result.

(c) Even though there be no tears, the simple abrasions of the cervix mucosa or, indeed, the wound surface of the corpus mucosa during or after abortion, etc., open an atrium for bacteria, which in cases of infection is especially liable to result in parametritis due to the bacteria passing via the lymphatics through the whole thickness of the cervix; though probably a greater proportion of these than is suspected have partial or complete perforation of the cervix wall by the catheter of the abortionist or the sound or curette of the operator, penetrating to the parametrium but not passing through the peritoneum.

In a case of criminal abortion reported by Dr. Charles Adams, of Chicago, a piece of rawhide 7 cm. long was pushed through the uterine wall and probably under the left plica Douglasii and presented later in the left second sacral foramen. There never was any peritonitis at any time, and consequently I think Dr. Adams' idea that it passed through Douglas' sac (intraperitoneally) erroneous. These perforations into the parametrium only must not be confused with perforations that pass through the peritoneum also, an interesting collection of which were

given from the literature recently by Dr. William Hessert.

There is still another puerperal origin of these pelvic abscesses, according to Kuestner, viz.: (d) A thrombo-endo-phlebitis (puerperalis) in which the infected thrombus in the uterine sinuses extends into the uterine veins in the parametrium and later ruptures through the vein wall into the loose parametric connective tissue; this probably is comparatively a more frequent source of pelvic abscess than is generally conceded. This possible origin of abscess should always lead one to be careful in making a pelvic examination in all puerperal infections, as roughness can easily dislodge such an intravenous thrombus, with resultant pulmonary embolism with sudden attacks of dyspnea or even sudden death or pulmonary abscess, which is naturally still more serious than the parametritis.

Lastly, it must always be borne in mind that secondary infections of the parametrium can occur from a primary infection via the sigmoid or rectum on the left or cecum or appendix on the right or, indeed, from either kidney region posteriorly or from the bladder or via the blood vessels, though neither of these come within the scope of this paper, yet they should always be considered as a possible explanation of parametric

phlegmon in the Virgo intacta.

The clinical divisions of parametritis which I have made are: (a) Simple exudate into the parametric cellular tissue, which may be of but small size and of so little virulence that resolution and absorption and even complete recovery later occur, so that no trace of any thickening is appreciable in the broad ligament during life (per vaginum) or when the abdomen is open for laparotomy or even at the autopsy. When we think of this the remark by Deaver that pelvic cellulitis is a rare condition is not surprising. Large exudates also may undoubtedly occur and be recovered from without ever being suspected.

Such an exudate would usually displace the uterus, if non-adherent, to the opposite side and encase it. It would be easily diagnosed if examination was made. But it is not usually discovered during the puerperium, as the genital canal is a noli me tangere at this time. The large exudate may also be resorbed, so that a few months later no trace of it can be discovered by touch; though usually the examining finger appreciates some induration in the broad or uterosacral ligament often very extensive with a cord-like shortening of the ligament, dragging the uterus to that side of the pelvis. Bandl stated that 58 per cent. of women who had borne children had appreciable cicatrices in the broad ligament. This percentage has probably materially lessened since the generalization of better antiseptic precautions in obstetrics.

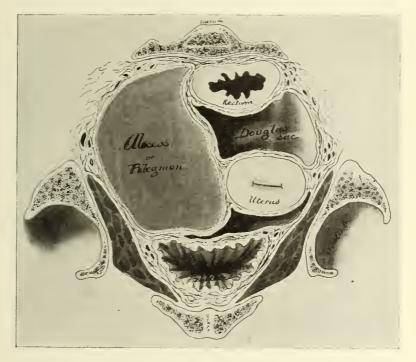


Fig. 2.—Parametric abscess crowding the pelvic organs to the left.

(b) Suppuration occurs with the formation of a so-called pelvic parametric abscess or phlegmon. They may be multiple at first, often breaking later into one large phlegmon, often of enormous size, because of the before mentioned looseness of the cellular tissue and consequent ease with which an exudate spreads. While the parametrium contains big blood vessels, it is comparatively poor in capillaries, and the walling off by small-cell infiltration and the formation of so-called granulations, pyogenic membrane, is less easily brought about than in denser tissues well nourished by capillaries.

In the latter the denser tissues themselves form some resistance to the spreading of the primary exudate and allow time for the rapid small-

celled infiltration to surround and wall it in until the granulation membrane can be produced. Indeed, in virulent cases the burrowing in the loose parametrium can be so rapid that in a short space of time the larger part of the pelvic connective tissue may be involved in one enormous

phlegmon.

The behavior of an extensive collection of pus in the parametrium can only be thoroughly understood by keeping in mind the foregoing remarks on the character and extent of the parametrium. As the pus increases in quantity, it usually burrows in one or more of the following directions, probably dependent on the location of the primary focus in the parametrium: (a) It may raise the whole ligament lata from one lateral edge of the uterus to the lateral pelvic wall, extending upward, and separate the two broad ligament leaves as high as the meso-ovarium or meso-salpinx.

(b) It may extend from the lateral border of the pelvis under the

peritoneum up into the fossa iliaca.

(c) It may extend under and to the left of Douglas' sac, to the loose connective tissue behind the Sigmoid Romanum or even to the left kidney.

(d) It may raise the cul-de-sac and lie sub- and retro-peritoneal, next

the sacrum.

(e) It may pass toward the right under the cecum into Korte's retro-

peritoneal, paratyphilitic space and even to the right kidney.

(f) It may burrow down between the rectum and vagina. This last fact should especially be borne in mind in operating, as this burrowing makes the usual opening in the fornix vaginæ non-dependent and increases the difficulty of drainage.

(g) Suppuration may occur in the utero-vesical parametrium, though this is comparatively infrequent as a result of puerperal infection. Yet it does occur from this source as well as secondary to infection of the bladder mucosa or wall and occasionally following infection of the preperitoneal connective tissue after laparotomies.

(h) The fluid portion of the pus in a parametric abscess, may be obsorbed in rare instances, and so-called inspissation and encapsultation of the pus occur, sometimes in old cases even being walled in by lime salts.

- (i) An abscess may remain with slight change in size and the active process subside, probably from attenuation of the micro-organisms. Such cases may continue months with a comparatively slight fever (fièvre hectique), e. g., temp. 100° F., some night sweats, anemia, anorexia, loss of weight, etc., even resulting in amyloid kidney.
- (j) The abscesses may point, according to Dührssen, most often above, less often under:
- (1) At Poupart's ligament. (2) Through above Crista ilei at the edge of the quadratus lumborum muscle or at Petit's trigone. (3) Via the foramina ischiadic or sacral under the glutei. (4) In the cavum Retzii in the anterior abdominal wall above the pubis. (5) In the vagina, which is the most desirable place of evacuation. (6) In the rectum, which is always undesirable as a place of opening. (7) In the bladder. Bazy reports 8 cases of rupture into this viscus. This, unfortunately, is rare, as it exposes the patient to the danger of an

ascending ureteritis and pyelonephritis. The case of parametritis, reported by Hoff, as breaking into the pyelon, was undoubtedly, from his article, a case of suppuration in the parametrium and not the parametrium. (8) The sepsis may be so virulent and the course so acute that the patient succumbs in a few days, even though previous to the infection she was a splendid example of physical perfection. (9) Peritonitis can occur if the parametric exudate lies immediately under the peritoneum. The degree of involvement of the serosa differs in severity according to the virulence, site and extent of the under-



Fig. 3.—Gauze drain in parametrium, raising the peritoneum of Douglas' sac.

lying infection. In the lighter forms of peritonitis, complete restitution may result after the evacuation of the parametric abscess or firm adhesions of opposing surfaces of the peritoneum can occur or the formation of bands, spiderweb-like, or, indeed, the infection can pass through or rupture through with a peritonitis purulenta, local or even general.

It must not be forgotten that in every case of parametritis there is also liable to be some endometritis and by extension via the tubes by continuity to the peritoneum, peritonitis as well as metritis; the last either by extension from the endometrium or from the parametrium.

The prognosis seems to be often impossible to make either from the history or the pelvie or the general physical or even bacteriologic examination. Laubenberg says in the acute infections the blood reaction is quicker, i. e., leucocytosis is quicker and quicker return to normal occurs after recovery, while in long drawn-out cases the return to normal is slow. Leucocytosis was mostly of the polymorphonuclear while the cosinophiles were diminished. He never observed nucleated red corpuscles. Dutzman says: "In cases where pus was present, leucocytosis invariably occurred. The degree of leucocytosis depended on the virulence of the pus. In cases where gonococci or colon bacilli were found, 11,000 to 13,000; in streptococcic infection 20,000 to 30,000 whites were found; a high count in acute inflammatory exudate generally indicates a favorable prognosis." A normal count he considered of bad prognosis.

Symptoms.—The history of these cases is usually that of chill and rise of temperature, after abortion or term labor followed by pain, usually pelvic, spontaneous and localized sacral or inguinal or diffuse abdominal pain, sometimes radiating to the leg on the side involved, one or both limbs being flexed, pain on pressure, or pain only on removing the hand, after pressure over the hypogastrium has been made. Difficulty in defecation and in urination may be present. If the exudate has burrowed down between the vagina and rectum, a marked rectal tenesmus may occur, or, if situated near the bladder, vesical tenesmus. Tenesmus of either of these organs should warn one of the close proximity of the abseess to the wall of the viscus, and indicate early operation to avoid perforation. A ease recently operated by me was treated for one year as a case of intestinal tuberculosis. Operation resulted in recovery. If the serosa is more or less involved, causing a localized peritonitis, the attending perimetritie symptoms sometimes overshadow those of parametritis.

The Diagnosis.—(a) Between the extraperitoneal or parametric form and intraperitoneal or perimetric form of suppuration, differentiation is often very difficult, but can usually be made by the parametric form appearing lower in the vagina and more surrounding or encasing and immobilizing the uterus, as it were, usually postero-laterally, displacing it latero-anteriorly. The vaginal fornix has a boggy feel in parametritis. There is also a loss of the gliding sensation to the finger in the fornix vaginæ, of the vaginal wall on the loose parametrium, which is almost diagnostic. In perimetritis, the signs are those of a peritonitis; if both are involved, the symptoms naturally are those of both, with those of peritonitis usually predominating. The aspirating needle for diagnosis is not devoid of danger and can usually be dispensed with.

(b) From fibroids. In parametritis the fever, often chill at onset, pain, tenderness on palpation and immobility, and the absence of the characteristic fibroid hardness.

On the other hand, fibroids are oceasionally cystic and soft, and may suppurate, eausing fever, etc. If inspissation and encapsulation of the parametric pus or exudate occur, it ean become gradually smaller and harder, and may after a while even become as hard as a fibroid. While parametritis protrudes usually deeper in the vagina than the usual

corpus fibroid, yet if the latter be intraligamentous or of cervical origin it also may grow low into the parametrium and bulge the vaginal fornix.

- (c) From ovarian tumors, by the afebrile history and peculiar consistency and position of the ovarian tumor, which is usually intraperitoneal and pedunculated, but may be extraperitoncal, as are also parovarian cysts, though even then it should be simple to differentiate unless suppurating, when it may be impossible. Ovarian cystomata are somewhat elastic to touch; ovarian fibroids and very small ovarian cystomata are fibroid hard.
- (d) Extra-uterine pregnancy, by the anamnesis and the course, the history of one or two months' amenorrhea and the signs of pregnancy. In retro-uterine hematocele, the symptoms are those of shock and concealed hemorrhage. The uterus is usually pushed directly forward onto the pubis. The examination over the hypogastrium, which should be done in all cases, often shows a prominence usually to one side, frequently easily palpated and giving dullness on percussion, not changing on change of position of the patient. In long-standing cases it may simulate a localized tubercular peritonitis, though the vaginal examination should allow of its easy differentiation when assisted by the history and a knowledge of the general physical condition.

Treatment.—(a) The hot-air treatment Dutzman used in 20 cases. Some were fresh suppurating cases, others old exudates, or remains of exudates in which the acute stage had long since subsided, and in which partial resorption had already occurred. He states that hot-air treatment made the prognosis better for the former and even cured some of the chronic cases. Bier also used hot air as an adjuvant to the incision with,

in his judgment, good results.

(b) The serum treatment does not seem to me sufficiently settled for me to do more than mention it for consideration.

(c) The incision and evacuation of pus is the treatment of which there can be no question, though even this demands much consideration of the route or routes to select as well as the method of drainage.

In the acute stages, cases of intraperitoneal, perimetric inflammation are more dangerous to operate than they are after the acute stage has subsided. This rule, of operating after the subsidence of the acuteness of the infection, has been applied also to the parametric abscess. Many deaths have been attributed, perhaps rightfully, perhaps wrongfully, to the too early operation, while but little consideration has been given the technic, it usually being dismissed by the foregone conclusive remark. "ubi pus. ibi evacua."

(1) To select the vaginal route requires much consideration. find pus in the parametrium with the aspirating needle does not exclude the possibility of the implication of the tubes and even the ovaries. The perimetritis symptoms that were present and probably dominated the symptom-complex at first may have subsided and those of the parametric phlegmon now be most in evidence. The extraperitoneal operation. by the incision over Poupart's ligament as made by Droese, is not suitable in women, the vaginal incision giving the best route and best drainage of the female paragenital tissue. The evacuation of pus, even in large quantities by the so-called vaginal section, is not necessarily proof of the completeness of the operation, for, as before stated, the tubes and ovaries may still be the site of suppuration. Conceding this to be true, we would hardly be justified in continuing through the parametric pus cavity and boldly evacuating an ovarian abscess or removing pus tubes, for the adnexal infection may be non-concomitant or differ in virulence. If the latter were the most virulent, the chances of a general peritonitis, from the clinical standpoint, would appear to be less than if the reverse, but, there being no means of a preoperative decision of this question, to say nothing of the blindness of the operation and the impossibility of keeping the intestines clean during the necessary adnexal manipulation, such a proceeding is to be proscribed.

(2) The peritoneal route via the anterior abdominal wall often gives us a better knowledge of the condition of the adnexa and the peritoneum and, even if the adnexa is not found implicated, it satisfies us that we have not omitted anything needed for a diagnosis. With our present-day technic it should be comparatively devoid of danger. In one case the author of this paper operated on an enormous parametric phlegmon extending high up above the brim through the abdominal wall, in two

sittings, with an excellent result.

(3) The parametric abscess can be opened through the vaginal route as an independent operation, which, after dividing the vaginal wall, can be done bluntly with the finger, carefully avoiding injury to the peritoneum. This is usually much simplified by the knowledge gained from having intraperitoneally inspected the condition of the pelvic organs and ligaments when the abdomen was open. Drainage through the opening made in the vaginal fornix, usually posteriorly, should be done either by inserting a tube or an iodoform cigarette gauze drain, placed in the parametrium. Carelessness in drainage is especially warned against by Bovea. Irrigation should not be done, as it many times opens fresh runways for pus. Especially dangerous in this regard is the use of hydrogen peroxid. Simple drainage does not always cure these abscesses, especially if the drainage is not free and dependent, which is the case, even in the vaginal fornix, if the pus has burrowed down between the vagina and rectum below the place of opening or perhaps around the uterus.

SCROFULA.*

HENRY G. ANTHONY, M.D.

Professor of Skin and Venereal Diseases, Chicago Policlinic. ${\tt CHICAGO.}$

Scrofula is a factor in dermatology, the importance of which is variously estimated, chiefly because of the diversity of opinion which exists as to what is to be designated by the term. Kyle says that it is nothing more than one of the manifestations of the initial stage of tuberculosis. Heyman says that it is a predisposition of the organism to inflammation.

^{*} Read before the Illinois State Med. Soc., 1905.

Years ago Henoch and Baginsky expressed the view that it is not tuberculosis, an opinion in which I fully concur. This is the most important point to be known in regard to scrofula. Any observer may convince himself that it presents clinical phases which tuberculosis never presents; it does not run the clinical course of tuberculosis, producing ulcers and other tuberculous lesions; the nasal and throat secretions do not contain the bacillus tuberculosis, and do not produce tuberculosis when they come in contact with the skin; children afflicted with tuberculosis of joints or of lymphatic glands do not present the lesions of the eye and of the skin, which are part of the clinical picture of scrofula.

Clinically, there is no reason for believing that scrofula is caused by a specific micro-organism, and, microscopically, none can be found. All evidence favors the view expressed by Cornet that scrofula is a chronic staphylococcus or streptococcus infection. It might properly be termed a pyogenic infection of the nose and throat. The cases of scrofula which are observed in this country, like those of Europe, occur among the rich or poor, and among those who live in the city or in the country alike. The difference between the cases which are observed in America from those

which are observed in Europe is that our cases are milder.

Most writers believe that heredity plays a part in the production of the disease. I do not. Where there are several children in a family, it is rare to observe more than one affected with this disorder. It is also rare to obtain a history of the same disease having been present in either of the parents during their childhood. In most cases the disease develops in the second year of life or later; in a few cases, I have been informed by the parents that the first evidence of the disease was a bronchitis, which appeared a few days after birth, but that can not be accepted as evidence of heredity. The idea of heredity is due, in my opinion, to the fact that scrofula is frequently confounded with tuberculosis, and is based on the observation of European and not American cases.

Cases of chronic pyogenic infection of the nose and throat may be observed, in which the local lesions have almost entirely disappeared, leaving distant skin and eyelid lesions to dominate the clinical picture. In the presence of such cases the observer might easily be misled into the belief that the affection began primarily in the skin. That the infection actually originated in the nose may be determined by following a number of cases during a period of seven years' duration. In lupus vulgaris, we have another example of a disease which usually begins in some distant organ and secondarily attacks the skin, while the primary focus of disease heals.

TUBERCULOSIS AND SCROFULA.

Where scrofula or, more properly speaking, chronic pyogenic infection of the nose and throat is present, tuberculosis readily becomes engrafted. We can never determine, in a given case, when this second infection has developed; nevertheless, the division of cases into uncomplicated cases of scrofula and those which are complicated with tuberculosis is necessary for a proper comprehension of the subject. It is the observation of cases in which tuberculosis has become engrafted, which causes many clinicians to believe that scrofula is nothing more than tuberculosis.

THE LYMPHATIC GLANDS.

The eervical glands and the glands in the groin may be enlarged in children who are elinically healthy. In this form of enlargements the glands are lima-bean size and larger. Where the cervieal, thoraeic, abdominal or inguinal glands are enlarged in scrofula, or, more correctly speaking, from chronie pyogenie infection of the throat and nose, they are hazelnut size and larger; they are movable under the skin; they are not matted together, and they do not suppurate, but in the presence of glands of this character the elinician can never exclude the possibility of engrafted tuberculosis also being present. That engrafted tuberculosis presents a diminished virulence has been demonstrated by the experiments of Moore, in England, who produced a milder form of tuberculosis by inoculating scrofulous lymphatic glands of the neck which contained tuberculous deposits into lower animals than when tissue from miliary tuberculosis was inoculated. Where the tuberculous infection is carried from the glands to some distant part of the body, the tubereulosis which results is often quite virulent.

THE CORRECT CONCEPTION OF SCROFULA.

It is difficult to convince a surgeon that it is possible to have a chronic pyogenic infection lasting for years, without suppuration, so thoroughly is he imbued with the idea that a pyogenic infection is an acute process, terminating in suppuration; nevertheless, chronic pyogenic infection exists. Christian Fenger recognized the correctness of this. What older writers designated by the term scrofula included cases of chronic pyogenic infection of the nose and throat, which produced distant symptoms by dissemination of the pyogenic micro-organisms and their toxins, together with the cases in which tuberculosis became engrafted.

The view which we take of the subject includes cases of chronic catarrh of the nose in childhood, either with or without distant microbic or toxic lesions, under the designation of "chronic pyogenic infection of the nose and throat," as one disorder, and the same condition, with engrafted tuberculosis, as a second disorder. With this theory of the cause of scrofula before us, we can readily comprehend all manifestations of the disease. A chronic pyogenic infection of the nose and throat gradually invades the cervical, thoracic and abdominal lymph glands; it passes through the Eustachian tube into the ear, and then through a perforated drum and the external auditory meatus until it comes in contact with the skin near the external ear, producing impetigo. It may extend to the bronchial tubes. The eyes and the skin may become infected by nasal and throat secretion, often carried to distant points by the fingers.

Symptoms.—Some writers state that children suffering from scrofula are poorly nourished. I often observe the disease in well-nourished children; furthermore, it is usually stated that those suffering from scrofula have poor appetites. I find that the appetite is often unimpaired, and in some cases the children have voracious appetites, even when the disease is severe. Scrofulous children often take cold easily; they often have a clayey complexion. Chronic pyogenic infection of the nose and throat produces distinct symptoms, which are never alike in any two cases.

The Eye Lesions of Scrofula.—None of the eye lesions of scrofula is tubereulous. On the free border of the eyelids, inflammatory nodes are often observed which are very strongly indicative of chronic pyogenic infection of the nose and throat. They are of considerable diagnostic value, when one has become accustomed to associate them with nasal infection. Phlyetenular conjunctivitis is always due to absorption of micro-organisms, or possibly their toxins, from the nose. Scrofulous conjunctivitis and keratitis are conditions produced by inoculation of micro-organisms contained in nasal, ear or mouth secretion being carried into the eyes by the fingers.

THE ERUPTIONS ON THE SKIN IN SCROFULA.

Scrofuloderma.—Some writers apply this term only to those secondary tubereular ulcers of the skin of the neck which result from suppuration of subjacent tuberculous glands. This is an incorrect use of the word. Scrofuloderma is subcutaneous tuberculosis; it has nothing to do with chronic pyogenic infection of the nose and throat, and it may develop on any part of the cutaneous surfaec. It may be associated with engrafted tuberculosis of the glands of the neck; it may be associated with internal or surgical tuberculosis; or it may be a primary affection. The word scrofuloderma and its French equivalent, "La Gomme Scrofulotuberculeus," are terms which should be dropped, and we should employ in their stead the expression "subcutaneous tuberculosis." This form of tuberculosis presents itself clinically in many ways; usually a pea-size nodule appears above the surface; in other eases there is no elevation. After a time, central softening occurs in the nodule, which has attained the size of a cent piece, and this eentral softening may be due to the formation of fluetuating connective tissue or to the formation of pus. Where these subcutaneous tubereulous deposits break down rapidly, they form eold abscesses. The eutaneous eovering of a subcutaneous tuberculous deposit may be destroyed by ulceration, producing an ulcer, from the surface of which unhealthy granulations spring up and form a cauliflower growth, or this form of tuberculosis may be transformed into lupus vulgaris.

Erythema Induratum Scrofulosorum.—This disease has been a favored theme of discussion among dermatologists during the past few years. Certain writers believe that it is one of the many forms of subcutaneous tuberculosis simply because they do not follow Bazin's original description with sufficient accuracy. That subcutaneous deposits of tuberculosis may closely simulate crythema indure of Bazin in their objective symptoms must be obvious to every experienced observer, but when the two conditions are considered side by side in all their clinical aspects the difference is apparent. It is essential that the clinician should be familiar with Bazin's original description of crythema indure, and that nothing should be designated by this term which does not closely tally with this description, which reads as follows: "Erytheme indure is of a scrofulous nature; it is not rare; it is characterized by red, indurated plaques, which disappear momentarily under finger pressure. Passing the finger over the surface of the skin, one can feel an induration in the skin which ex-

tends into the subcutaneous tissue to a variable depth. The red color of the plaque is more or less marked; often it is violaceous. The plaques do not present a marked outline; they are more marked in the center than at the periphery, where they gradually blend with the surrounding tissue. The plaques do not itch. Pressure is hardly painful. The affection usually occurs on the legs; more often in girls than in boys. I have seen it often on the legs of young laundresses, which present all attributes and physical appearances of scrofula. The scat of predilection for the development of the disease is the external and lower part of the leg. We observe it sometimes just above the heel, along the tendo-Achilles. It may develop on the face, and I have seen it in this region associated with scrofulous disease of the eye."

The discussion regarding this disease is as to its nature. Some writers find that it presents the structure of the tubercle. Against this view we have the fact that it has recently been shown that in many conditions subcutaneous fat tissue undergoes a metamorphosis, in which it presents the microscopical appearance of tuberculosis. The discovery that atrophy of fat tissue has heretofore been mistaken for tuberculosis is one of the most important recent additions to pathologic knowledge, and will necessitate a complete revision of the histopathology of diseases of subcutaneous tissue heretofore classified as tubercular. All writers who have studied crythema indure since fat atrophy has been recognized agree that this is what is present in this disease.

At the present time some believe that erythema indure is chronic erythema nodosum; others that it is a tuberculide. A tuberculide is any eruption of the skin which is inevitably associated with tuberculosis; which does not contain the bacillus tuberculosis; will not produce tuberculosis when inoculated in lower animals, and which does not show the structure of the tubercle. The disease may be due to toxins derived from chronic pyogenic infections of the nose and throat.

Lichen scrofulosorum is one of the many cutaneous manifestations of tuberculosis which is associated with a distant focus of tuberculosis. The primary tubercular disease from which the eruption is derived is usually some form of surgical tuberculosis, such as tuberculosis of lymphatic glands, bones or joints. It is more common in childhood than in adult life, and it is apt to appear whenever a tubercular child develops fever, due to the tubercular disease, and not to an intercurrent affection. Its appearance may be the first evidence of the presence of engrafted tuberculosis in a given case of scrofula. The eruption comes out suddenly on the chest or abdomen, in the form of pin-point to pin-head size papules, which are conical; they are the color of the normal skin, or pale red, and they are situated about the pilosebaceous follicles. These little papules are clustered together, forming plaques which are oval or rounded in form, and the size of a silver dollar. In doubtful cases the lesions may best be seen by stretching the skin between the thumb and finger.

I agree with those who regard this tuberculide as a tuberculous toxemia, and not with Neisser, who thinks that it is miliary tuberculosis. Miliary tuberculosis, when it extends to the skin, produces an entirely different clinical picture from this disorder, as is shown by the cases of

Kaposi. It is easy to find bacilli in miliary tuberculosis; they are almost never found in this disease. Inoculation of tissue from this disease does not produce tuberculosis.

Chillblains.—These are caused by tuberculous toxins, and when present in cases of scrofula they indicate that we have to do with the engrafted tubercular form of the disease. Hyperidrosis is usually not considered to be a symptom of scrofula, but we see it so frequently in the pyogenic form, in the total absence of rickets, that we consider its presence a matter of importance in the diagnosis of some cases.

We frequently observe cases in which beads of perspiration stand out on the nose of scrofulous children, and along the line of the hair on the forehead, together with excessive sweating of the hands and feet, which are also cold and clammy. Examine the stockings of scrofulous children, and you will often find them damp from perspiration. This excessive cold perspiration, which is caused by pyogenic nose toxemia, may persist through life.

Granulosis rubra nasi is a disease affecting the sweat glands of the tip of the nose and caused by this excessive sweating. It was first described by Luithlen, in 1900, and it was named by Jadassohn. It is always associated with the pyogenic form of scrofula. The eruption consists of pin-point to pin-head-size bright red points, which are the mouths of the sweat glands, and in some cases the entire tip of the nose presents an additional hyperemia. The disease is usually called acne rosacea by nose and throat specialists, who overlook the fact that acne rosacea does not occur in childhood.

Impetigo.—Most of the eruptions of the skin occurring in scrofula which are called eczema are not eczema, but are due to the same pyogenic micro-organisms which infect the nose and throat. They are, therefore, cases of impetigo caused by the pyogenic micro-organisms being inoculated into the skin either by discharges from the ear, nose and mouth, or by the fingers. Where the infection is produced by nasal discharge, the earliest evidence is a fissure in the mucous membrane of the nostril; where the infection has progressed, the infection produces redness, swelling and some pustulation of the upper lip just below the nose. In some cases these lesions will not be observed unless carefully sought for. The third step of the pyogenic infection is the hypertrophy of the upper lip, which is a condition of elephantiasis, by which the upper lip projects over the lower lip, sometimes extending almost to the point of the chin. Although common in Europe, this lesion is rare in this country. In one well-marked case which came under my observation, the diagnosis of sarcoma of the lip had been made and excision advised. The application of ointments to the lip and inside the nose, together with massage, will cause the lip to decrease in size to a marked degree.

Affecting other parts of the skin, the progenic infection produces plaques of inflammation studded with split-pea-size excoriations covered with gummy crusts; in a few cases we find vesico-pustules, the rupture of which produces these excoriations. The crusts contain the progenic micro-organisms. The vesicles of eczema are sterile. Through auto-inoculation these micro-organisms infect scratch-marks, and in some cases

produce deep phlegmonous inflammations, which terminate in abscess formation. This continual auto-inoculation may continue for years, and it can not always be checked by the application of dressings.

We observe a special form of this pyogenic infection occurring in children, which consists of small papules, umbilicated pustules, crusts and sears, which somewhat resemble chickenpox, but which differ from that disease in the location, occurring in patches over the trunk, and in the fact that it lasts longer than varicella ever lasts. Such pus infections of the skin do not simulate chickenpox sufficiently to deceive a dermatologist, but they often lead to errors in diagnosis by general practitioners. The scars produced by pus infections, as Alexander has said, can not be distinguished from the pitted sears of chickenpox. Whether the pyogenic infection is always carried to the skin by auto-inoculation is a question which we can not determine at the present time. It is possible that the eruption is produced in some cases by micro-organisms climinated through the glands of the skin, as in many cases the pyogenic infection is generalized, as is shown by the fact that distant lymphatic glands are involved. Where antiseptic dressings are applied to a part for weeks, so that no autoinoculation can occur, we have seen the eruption reappear under the

Eczema.—That the primary lesion of eczema is sterile is an established point in pathology. No eruption of the skin which produces impetigolesions should be called eczema. The cases of what I call eczema in scrofulous children are patches of erythema occurring on the cheeks and about the nose and mouth. In some cases, the eruption is so superficial that it is scarcely visible, while in other cases the infiltration is deeper. The patches have a rather well-defined border; their surface is red, dry and scalv. In some instances, the center of such a patch will clear. leaving a circinate plaque, which is often called ringworm. Such eruptions often increase in winter. I have observed that children presenting such eruptions of the face often have cold, sweaty hands and feet, enlarged glands in the neck, and enlarged tonsils. They take cold easily, breathe through the nose at night, and are constantly clearing the throat. Where such cases have been referred to throat and nose specialists and adenoids removed, the patches of eczema have disappeared within a few weeks. In fact, the removal of adenoids in such cases gives better results than internal treatment combined with the application of ointments. In some cases, patches of eczema are present, without adenoids in the throat, and then the eruption is usually supposed to depend on gastrointestinal derangement. But a careful study of such cases convinces me that even here there is present a pyogenic infection of the nose and throat in moderate severity, as the basis of the dermatosis. The manner in which pyogenic infection of the throat produces patches of this kind

Scrofula with Bronchitis.—The severest cases of scrofula are those in which there is also a chronic bronchitis present. I believe that this bronchitis is also a pyogenic infection. It is not tuberculous, because in most cases it heals. The physical signs present are not those of tuberculosis, and the expectoration does not contain the bacillus tuberculosis.

Some of the cases which I have observed have been examined by others, who have never found tuberculosis present. This form of bronchitis may develop shortly after birth, but usually it appears after the fifth year of life. After the eighth year of life, the expectoration may be abundant, half a teacupful daily in some cases. It is very possible that the bronchitis may exist without the throat and nose symptoms being present, but I have not observed it.

The Heart.—After the bronchitis has existed for several years, a peculiar lesion of the heart develops. It is not a valvular lesion, but rather a peculiarity in the heart beat. The heart action is intermittent and irregular. First it beats fifteen to twenty strokes rapidly; then it intermits two or three strokes, and then beats fifteen to twenty times, not as rapidly as at first; then once more returns to the original beat. In a few cases the little patients complain of a pain over the heart. Cases have been observed which cause me to believe that the heart beat falls to about sixty beats a minute, and becomes more regular at the time of puberty, when the pyogenic infection diminishes or heals.

Scrofula and Syphilis.—Syphilis may produce eye lesions which closely simulate scrofula, but a careful study of all the symptoms present in the case will almost invariably prevent errors in diagnosis. In another class of cases, patients have a pyogenic infection of the nose and throat, and congenital syphilis. The clinician must not rely on a syphilitic history in the parents for the diagnosis of these cases. They are to be detected by finding a lesion characteristic of syphilis in some distant part of the body. In one of my cases, a child had pyogenic infection of the nose and throat and mucous patches of the tongue; in another we found pyogenic infection of the nose and throat and a syphilitic gumma of the leg. When mercury is administered in these cases, the syphilitic lesions heal, and with them the eye lesions, which are not syphilitic, but pyogenic toxic lesions. It is probable that the explanation of this clinical observation is that as the child's general health improves the pyogenic toxin is eliminated. Hyde and McEwen are entitled to the credit of directing attention to the fact that long-standing sweating of the hands and feet, and certain pathologic conditions of the nails are associated with brachycardia and tachycardia. In cases of this kind, a possible history of scrofula in childhood should be sought.

In conclusion, the term scrofula should be dropped, and we should recognize under the old diagnosis, scrofula, the following conditions: Pyogenic infection of the nose and throat with or without toxemia; pyogenic infection of the nose and throat with tuberculosis; pyogenic infection of the nose and throat with syphilis.

96 State Street.

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MAY 1906.

MEDICAL ORGANIZATION.

During the last month much has been said in Illinois regarding medical organization. The chairman of the Organization Committee of the American Medical Association, known in medical circles all over the land as an authority on these lines, has devoted an entire month to talks and conferences with the public and the members of the profession. In thirty-one of the principal cities of the state, meetings have been held for the discussion and consideration of the needs of the profession and the public. All who attended these meetings have been aroused to broader views and stimulated to greater activity. It now remains for the organized profession throughout the state to carry out the proposed reforms and make real the ideal conditions described as attainable. In this connection it is, perhaps, desirable to pause and ask ourselves what effective medical organization really is and why it is desirable.

The county is the unit of our civil organization. It was, therefore, most wisely chosen as the unit for medical organization. The State Association and the American Medical Association are only the aggregate of the county society units. They, therefore, can take care of themselves. If the county flourishes, the higher organizations can not help but prosper. The ideal county society, then, should have the following characteristics:

- 1. It should include every moral, reputable, legally qualified physician in the county. The time has come to do away, once for all, with the absurdities of sectarianism. There is no more reason for "schools" of medicine than for schools of chemistry or geology. Scientists differ as to the age of the earth, the effect of fire and water on rocks, etc., but they do not, therefore, organize rival schools and refuse to co-operate. Sectarianism in medicine is largely responsible for present-day conditions. Differences in theories regarding the action of drugs, the branch of medical knowledge concerning which we know the least, are no fit grounds for division of a great and noble profession. It is significant, as has been obscrved, that men quarrel most bitterly regarding matters of which they know the least. Mathematics, the most exact of all sciences, has never caused the slightest rancor. Theology, of which we know nothing whatever and which consists of pure speculation, has deluged the world in blood for ages. Physicians to-day are homeopaths or eclectics, just as they are Presbyterians, Baptists or Methodists, because they were born and brought up as such. There is only one science of anatomy, physiology or bacteriology. There can be but one "school" of scientific medicine. He who attempts to limit it is as narrow and as much in need of education as he who puts himself outside of it.
- 2. The ideal medical society will endeavor, as its primary aim, to make of its members the best and most capable and skillful physicians and surgeons possible. It has been amply and abundantly proven that nothing pays so well in the end as brains and work. If a physician wishes a larger income than the average, let him acquire knowledge and skill above the average. This can be accomplished through co-operation and division of labor in a way never possible through individual effort and competition.
- 3. The ideal county society will strive to make the people of its jurisdiction as healthy, intelligent and happy as possible by preventing disease and improving conditions. Along this line the possibilities are unlimited and vary with locality and conditions. It is coming to be more and more recognized that the doctor is a semi-official sanitary policeman. It only needs the influence and power which will come through perfected organization, to endow him with the authority to execute and administer as well as to advise and instruct. This is far off, but it will come in time.

This is the ideal condition. It can be made real or at least approximated. Every year the field of the county society is broadening, more is actually being accomplished. Witness the Ottawa Tent Colony, the Crawford County Conference on Tuberculosis, the work of the Morgan County Society at Jacksonville for the instruction of the public on tuberculosis, the Chicago Tuberculosis Exhibit lasting four weeks, the public-lecture course of the Chicago Medical Society, now in its third year. These are signs of the times and are only beginnings. Civilization

to-day is more complex than ever before in the history of the world. We are, each one of us, more dependent on each other than ever men were before. In this highly complicated social organization the physician has duties, peculiar to himself, which are shared by no other class. In past years medical men, as a whole, have been true to their duties and responsibilities. That they will be equally faithful in the future there is no doubt.

THE BILL BOARDS CENSORED.

That the public conscience is being awakened to the necessity of care in the character of advertising matter placed before its view is shown by the recent action of the Association of Billposters and Distributors. The use of all sensational, vicious and suggestive paper is denounced by them, and a penalty will be laid, after Aug. 1. 1906. on members who post such paper. Five years ago this organization ruled out all objectionable medical advertising.

RATES TO SPRINGFIELD.

The Committee on Transportation wishes to announce that arrangements have been made for a round-trip rate of one fare from Chicago to Springfield via the Illinois Central Railroad. A special train will be run, leaving Chicago on the night of Monday, May 14, and reaching Springfield Tuesday morning. In order to secure this rate a party of 150 is required. All Chicago physicians intending to attend the Springfield meeting are urged to send their names at once to Dr. James H. Stowell, 103 State street.

AMERICAN MEDICAL DIRECTORY.

The Directory Department of the American Medical Association advises us that the compilation of the portion of this work for Illinois is practically complete and that the state directory is now in type. All changes and additions from now on will have to be made in the proof. It is desired that the name of every legally qualified physician in Illinois appear correctly entered in this Directory, also that due credit be given for membership in county and state societies. Your name can not appear in capitals unless you are a member in good standing of your county society and your name has been sent to the state secretary by the county secretary for enrollment as a member of the Illinois State Medical Society. If you have moved since January 1 send your change of address, if you have not already done so, to the Directory Department, 103 Dearborn avenue, Chicago. By thus co-operating you can secure a correct entry of your name under the proper address and can help to make the list of physicians for Illinois accurate and up to date.

THE SPRINGFIELD MEETING.

Practically all of the details of the approaching meeting at Spring-field were given in the April number of The Journal. A few points, however, require emphasis:

1. The meeting will be held on May 15, 16 and 17, the date originally fixed. Another date was considered, but it was finally decided to make

no change.

- 2. The attention of all members is called to the official program which appeared in the April number of The Journal. This is the most attractive program that has ever been prepared, both as far as the number of papers and the range of subjects are concerned. Every member who can should endeavor to attend the meeting and hear these papers read and discussed.
- 3. The social features arranged for by the local committee are very attractive, embracing a reception at the governor's mansion on Tuesday evening and a lawn fête, picnic lunch and vaudeville entertainment Wednesday evening. These special features will be enjoyed and should be largely attended.

DR. McCORMACK'S WORK IN THE STATE.

During the month of April, the entire state of Illinois has been traversed by Dr. J. N. McCormack, as the chairman of the committee on organization of the American Medical Association. Reports of the earlier meetings appeared in the April Journal. The accounts of the meetings at Carlinville and Stirling, together with Dr. Black's letter, are sufficient to show the value of this work and the estimate placed on it by those who have attended these meetings. That they meet a need of both the profession and the laity has been amply demonstrated. It is also evident that the time is ripe for the medical profession to assume its proper place as a teacher of the public and to take the lead in the education of our law-making and law-enforcing bodies, in order that the public health and life may be protected against ignorance and individual greed.

It is regretted that the audiences that listened to Dr. McCormack were not much larger. In every town in which he spoke, the leading citizens said, after the lecture was over: "If you will come back, we will pack the largest hall in town with people to hear you." The attention of councilors, state and county secretaries and society members in the states which are still to be visited by Dr. McCormack, is called to this point. Get your members and their patients and friends out at the time of the meeting and then there will be no regret over opportunity lost after the meeting is over.

DR. M'CORMACK AT CARLINVILLE.

The meeting at Carlinville is reported by the local press, as follows:

Dr. J. N. McCormack, of Louisville, Ky., delivered an eloquent and instructive address in the circuit court room in this city Wednesday afternoon to a fair sized audience. He is the head of the organization department of the National Medical Association, and one of the best lec-

turers in the profession. His audience was not as large as it would have been had the lecture been delivered in the evening, but those who heard him are loud in his praises. His address was earnest, honest and at times witty and eloquent. His plea was for coöperation of the medical profession and the citizens, and the conserving of the best interests of all.

In the course of his talk he uttered a scathing arraignment of patent medicines, which he designated as "cheap cocktails;" explained the feeling of the profession toward the clergy; argued for better pay for doctors, whom he classed as members of the most noble charitable and self-sacrificing of professions; the monthly collection of fees; and in fact

to use his own words "lifted the veil" on numerous questions.

Dr. McCormack explained that his attention had been called to the necessity of the work of organization in which he is engaged by his own experiences as health officer of the state of Kentucky for a long term of years. He found that the medical profession was in a state of confusion. Harmony did not prevail and one doctor spoke continually in disparagement of another. Under such a condition of affairs it was impossible for the profession to do its best work, to secure proper legislation, to inspire the necessary confidence in the public. "This lack of organization," said Dr. McCormack, "has so crippled the profession that government physicians have absolutely no power, that health departments have their hands tied, and consequently an immense loss of life and money has resulted from preventable and unnecessary diseases." "Why should a great profession allow itself to be hampered by jealousies?" asked Dr. McCormack, "no class can compare with it. Doctors do more for humanity than all your churches, Christian Endeavors, Epworth Leagues, Y. M. C. A.'s, benevolent organizations, and all such things combined. We practice what they preach." The country doctor the speaker called the noblest specimen of God's manhood. "After this monumental charity," continued the doctor, "a doctor can't live in peace with his neighbor if he happens to be a doctor."

At the close of the address responses complimentary to the gentleman's efforts were made by J. I. Rinaker, Dr. J. M. Barcus, W. H. Behrens, A. H. Bell, Rev. Dr. Canady, Rev. Todrig, Dr L. H. Corr and others. These speakers conveyed the sentinment so unanimously expressed by all that the address was heartily approved and thoroughly enjoyed by every one present. The only regrets expressed were that all citizens could not have

been present to hear the address.

DR. M'CORMACK AT STERLING.

The local medical profession held a very interesting and useful meeting at the Fourth Street M. E. church, Saturday afternoon and evening. Many out-of-town physicians were in attendance, including men from Freeport, Rutland, Dixon, Ashton, Tampico, Coleta and Fulton. Dr. McCormack, of Bowling Green, Ky., was the principal speaker of the day, addressing the profession in the afternoon and the general public in the

evening.

During the afternoon meeting the Doctor gave a heart-to-heart talk to the doctors, urging them to organize that they may be able to get the proper medical laws placed on the statutes of the state of Illinois. Illinois, in her medical laws, is twenty-five years behind the times. There are in the state no county health boards, no county health officers, and in but few cities do we find city health officers. In fact where these officers do exist they carry with them but little authority, leaving the medical officer in charge with his hands tied.

Doctors must and should study; the better way to do this is for several to join together in a regular course of study, one man working alone can accomplish but little. The doctor advocated the establishment of postgraduate courses in every county, having weekly meetings to discuss medical subjects. Without this it is impossible to keep abreast of the times.

At 8 o'clock Dr. McCormack addressed the public. He spoke of his work for the past five years which consisted in traveling over the United States in the interest of the medical profession under the auspices of the American Medical Association, organizing county and state societies, inaugurating post graduate courses, uniting the profession (not into a medical trust, the doctor is a Southern democrat, as much opposed to a medical trust as to the Standard Oil trust), into a strong body for the betterment of the individual members and thereby giving the public better medical services. The organized profession receives recognition by the various state legislatures and secures proper laws and sanitary regulations. The doctors are always looking for something to prevent disease, thereby removing disease, in reality working against their own livelihood. "Ours is a profession and not a trade."

The doctor who cuts prices is a danger to the community, for by the act he stamps himself as inferior to his competitors in the town wherever he may be practicing. The doctor is dealing with life and death, therefore he should have a clear, keen brain undimmed by drugs or liquor. He should be the model of the community, cleanly in habits, both physic-

ally and morally.

After the doctor had concluded his address the chairman called for responses from the audience, several of whom responded, heartily indorsing the doctor and pledging their support in the matter of securing better medical legislation in the state.—Sterling, (Ill.) Evening Gazette.

DR. M'CORMACK'S ORGANIZATION WORK.

The following letter from Dr. Carl E. Black is reprinted from The Journal of the American Medical Association for April 21:

Jacksonville, Ill., April 17, 1906.

To the Editor:—I write to ask if it would not be desirable to do something to secure for Dr. McCormack audiences somewhat in proportion to the importance and value of the great humanitarian work which he is doing. It seems to me a shame for him to go on from day to day making these important talks to little groups of doctors and citizens, when every person is so vitally involved in the subjects discussed.

No one who may call on a physician for services should fail to hear these topics considered. The patrons of physicians will be greatly benefited and will look on the physician with an increased respect if he is worthy, and if not will set about to make him worthy or discard him as unworthy. It is impossible for the local medical men to do this work effectively without more detailed information as to what is to be expected.

Last Tuesday evening Dr. McCormack talked to our citizens and the room was filled with our best people. Everybody was delighted, but all united in saying that it was a great misfortune that only two or three hundred people should have had the privilege of being present.

This is what I hear every place Dr. McCormack has talked. They say, "If we had only known something of the character of his address beforehand there would have been two or three times as many present."

The fact is, Dr. McCormack is doing a great missionary work, probably the greatest missionary campaign by any individual to-day, and we should recognize it as such and give it the support and advance announcement which it descrives. The profession, as well as the people, should be better instructed in advance as to the field to be covered and the objects of these talks. If it could be made plain that the primary object is to help the people and give them a proper conception of what organized medicine stands for, it would go far toward securing the eo-operation of all good citizens in doing away with inherited antagonism to the medical profession, which has long existed among our people.

The profession, as well as the people, should learn from him that the basis of most of our professional difficulties and misunderstandings with the public are to be found in the jealousies and antagonisms within our own ranks, which we are making a great campaign to eliminate. The doctors of the past have kept themselves poor by hating each other and misleading the public. Everyone should understand that one of the purposes of this great work in which Dr. McCormack is engaged is to improve the condition of the profession by pointing out its poverty,

brought about by envy, jealousy and poor business methods.

He most admirably brings about a frank and open discussion of these subjects among the doctors and between them and all classes of the public. He drives home the lesson that a jealous and envious doctor, and one kept in poverty, is a danger and menace to the community, and plainly advises the public against the employment of such. Neither the doctors nor the people realize the number or importance of these problems of mutual interest.

His statement of the poor business methods of many physicians, as well as their bad professional methods, attracts attention and does great good. The drug store evil, the social disease evil, and inattention to sanitary and health matters are a few of the subjects of mutual importance which receive attention in his addresses and never fail to arouse the

public.

The remedy for these and other evils and antagonisms which exist he finds in a complete understanding (organization) among ourselves and a frank discussion of every interest of the profession with selected elasses of the public,, as well as the general public and patrons of the physicians. If physicians would realize the importance of these subjects they would soon see, what Dr. McCormack makes so plain, that the medical profession has no interest, including our financial condition, which is not of far

more importance to the public than to the doctors.

If some plan could be devised by which at least the members of our county societies were informed in advance of the scope and importance of these addresses, it would certainly aid Dr. McCormack in his work. No man can do this effectively for himself. In order that the lawyers, bankers, editors, clergymen, teachers, druggists, legislators, commercial bodies, city and county officials, civic leagues. W. C. T. U. and Y. M. C. A. members, elub women, farmers' organizations, labor unions, and all others, can be impressed with the importance of the subject, they must have some advance information as to the personality of the man as well as the character of his address. Each doctor should endeavor to have his patrons present. He will be amply rewarded by the better respect and better pay which they will give him, for they will certainly hear some of the most vital questions of the day presented in a most charming, effect-

ive and practical way. Dr. McCormaek can tell the plain truth in a way which excites great interest and desire to do better, but never leads to

bitterness or leaves a sting.

This work has such unlimited possibilities for good to the public, to the sister professions, and to our own profession, that it is unfortunate that we do not secure for our field worker in this great campaign of education a better hearing. Scores of my own citizens have expressed their regret at not being more carefully informed as to what was to be presented in order that they could have attended. The purposes, the evils to be corrected, the classes to be reached, the remedy to be applied, and the possibilities of the work should be understood in advance if the greatest good is to be accomplished by these addresses.

You can not too strongly impress on the profession and on the public the value and importance of the subjects, and you may rest assured that there will be no disappointment on the part of either after hearing one of

Dr. McCormack's most admirable and practical addresses.

I write to you in the hope that some better plan may be devised by which the profession and the public may have more advance information in order that a greater number of people may have the privilege of this instruction.

CARL E. BLACK.

Reports from other sections of the state are equally enthusiastic. The Sentinel, Pontiac, says: "Dr. McCormack gave one of the best talks ever delivered in Pontiac. His lecture was devoid of all technical terms and high-sounding phrases and could be understood by the ordinary school boy of 15 years. His remarks on the organization of the profession were pertinent. He told his hearers of what great good could be accomplished by the doctors organizing and what a great work could be done toward alleviating the suffering that now exists. He was given rapt attention by his hearers and was frequently applauded."

The Ottawa Free Trader says: "Dr. McCormack delivered one of the most interesting and able talks ever heard in this city on a subject that was not only of value to the profession he represents, but to all classes of people as well. The spacious auditorium of the Baptist Church should

have been filled to the doors."

The Joliet News says: "Quack doctors, quack preachers and quaek medicines were honestly castigated by Dr. McCormack before a large, interested and delighted audience in the Public Library Building."

In Chicago, Dr. McCormack addressed two audiences, one in South Chicago at Bessemer Hall on Friday, April 27, and one at Handel Hall on Saturday. April 28. It is carnestly hoped that the interest manifested and the good accomplished by Dr. McCormack's month in the state will lead to a continuance of these meetings and free discussions on the part of the organized profession and the general public. Every county society should have, at least once a year, and as much oftener as arrangements can be made, a public meeting for the discussion of medical questions of interest to the general public to which the representative citizens of all classes are invited.

THE CHICAGO TUBERCULOSIS EXHIBITION AND THE WESTERN TUBERCULOSIS CONFERENCE.

Great credit is due to the Chicago Tuberculosis Institute and the Illinois State Association for the Prevention of Tuberculosis and to no small extent also to the Municipal Museum of Chicago, for having brought to the West the exhibition collected by the National Association for the Study and Prevention of Tuberculosis. In no other city has the exhibition created such dccp interest and brought together so many people from the city and the surrounding country and especially those actively working in this case, eager to learn and to discuss the various phases and requirements of the problem. President James of the Illinois State Tuberculosis Association, last year appealed for a unanimous backing from the entire community in this great question of disease and health. The attendance and the interest in the exhibition and its conferences showed that this appeal is nearing, more and more, its fulfillment in this part of the country.

The exhibition was housed in the rooms of the Municipal Museum in the Public Library building, one room being set aside for the conferences and daily lectures. An excellent pathological exhibition, arranged by Dr. Zeit, was added to the original collection from local exhibitors, principally Rush Medical College, Northwestern University Medical School and College of Physicians and Surgeons. The grouping and arrangements of the exhibits were admirably carried out, so that the visitor could, in logical sequence, instruct himself in regard to "the cause, nature and effects of tuberculosis" and also about the most modern methods employed throughout the world for its prevention and cure. Things that had a somewhat vague meaning in the minds of the people and the physicians took concrete form through this objective representation and there is no doubt that nothing could have better brought home to the visitor the real meaning of tuberculosis with a message of hope for its ultimate eradication.

Three groups of exhibits attracted the most distinct attention; the pathological specimens, the appliances for out-door treatment and the graphic representations of the local distribution of the disease. To one familiar with the tremendous strides made in the last few years in this country for sanatorium provision, the exhibition proved a great revelation. Where a few years ago practically nothing was done, these exhibits of the Sanatoria at Rutland and Sharon, Mass., of Liberty and Stonywold and Saranac, N. Y., of the Maine State Sanatorium, of the Agnes Mcmorial Sanatorium, at Denver, Colo., and numbers of others, gave evidence of great activity in this direction. And although a comparison with the sanatorium movement, illustrated from other countries, notably Germany, France and Switzerland, shows them still considerably in the lead, there could not be any doubt in the minds of the visitors that very material headway had been made in this country.

As typically American might be designated those exhibits illustrating the cheaper, more temporary appliances for out-door treatment. While this feature was entirely missing in the exhibition held last year in Paris, in conjunction with the International Congress, here it took a most prominent place and very rightly so. In a problem of such magnitude, the extent of curative efforts is naturally limited by the expenditures necessary and it is evident that if cheapness and effectiveness of the appliances can be combined, a much wider range of useful activity can be assured. Shack's, lean-tos and tents were the principal representatives of this group. Of the first two the Loomis Sanatorium Lean-to, with its out-door sleeping shelter and its attached, heatable dressing room; of the last, the tent of the Ottawa Colony, might be regarded as typical representatives. It was interesting to note how completely the shack has taken the place of the tent in the East, while here in the West we still persistently cling to it. The exhibition will probably help much towards settling the dispute about the relative merits of these two important appliances.

Among the exhibits illustrating investigations of the prevalence of tuberculosis in certain cities, the one of the New York Health Department gave particular evidence of a useful and efficient activity, which might well serve as a model anywhere. Its system of reporting, recording and investigating cases of tuberculosis, its methods in dispensary and hospital provision and the energetic enforcement of laws dealing with this subject, so well illustrated in this exhibition, has made the tuberculosis work of that Department a model for the whole world. One can only hope that the opportunity for study of these methods on the spot has been utilized by our own authorities for the benefit of our committees. All other similar efforts shown at the exhibition have originated from private initiative, mostly co-operating with municipal authorities. Prom-

inent among these were the exhibits of the Boston Association for the Relief and Control of Tuberculosis, the Tuberculosis Committee of the Charity Organization Society of New York, the Henry Phipps Institute,

of Philadelphia, the Consumers League, of New York, etc.

Particularly gratifying to our local pride was the interest shown in the exhibits of the Chicago Tuberculosis Institute and the Illinois State The former's work, inaugurated by the Visiting Nurse Association and now carried on independently, though with their cooperation, was illustrated by pin-maps, showing the distribution of tuberculosis in the various wards of Chicago. These showed, for certain wards, a rate of tuberculosis considerably higher than that for the whole city, or for other cities of equal population. In one ward, with a population of nearly 50.000 inhabitants, it was shown to be about three times higher, thus showing very graphically the grouping of great numbers of cases in certain districts. The dependency of this fact on the various social conditions, can be studied from the records of the Institute, at any moment; with great accuracy and the system by which this is accomplished was much admired and flatteringly commented on by the visitors. The lecture service and other educational efforts of the Institute were also shown by exhibits and the great number of lantern slides shown at the conferences, illustrating all phases of the subject by pictures from this country and abroad, was evidence of a local activity, completely ignored by many heretofore. Great interest was evidenced in the plans for a dispensary of the institute, for which the land has already been donated and funds are being collected. Its provisions, not only for medical dispensary treatment in properly equipped rooms, but also for direct material relief through a diet and milk kitchen and a roofgarden-school for children of consumptive parentage, will give it the unique and novel position of a medical neighborhood settlement.

The work of the Illinois State Tuberculosis Association, although not much older than one year, was illustrated especially by a graphic demonstration of its radius of activity throughout the state through the organization of affiliated local societies. One found there the educational reading matter which the association prints for distribution by the affiliated societies and also the plans for a state sanatorium, proposed by the legislature and which, after passing both houses, was vetoed by Governor Deneen. Next session better success is to be expected.

The educational influence of the exhibition was very considerably chanced by the conferences and lectures held at the same time. Six conferences and daily afternoon lectures were given before large audiences, indeed so great was the interest in the conferences that the room provided was wholly inadequate. The conference hall was suitably decorated. Behind the platform hung the white banner with the international tuberculosis cross with its two horizontal bars and around the wall hung mottoes, the most striking of which were: "It is in the power of man that all parasitic diseases disappear from the world" (Pasteur), "Give him air, he'll straight be well" (Shakespeare), "Prevention is better than cure and far cheaper" (John Locke), etc. The formal opening conference, presided over by Dr. Frank Billings, was an occasion which will always remain memorable in the minds of those present. For the first time, the highest civic officials, the most eminent physicians, the learned academicians and the practical social workers met in this part of the country, all, by their words, showing how thoroughly awake they were to the necessity of active co-operation of their respective forces for the one purpose, the eradication of tuberculosis. Their addresses showed this not as a medical problem only, but as a social one, which to be done away with, needed a mobilisation of all social forces. Governor Deneen; Health Commissioner Whalen; Dr. George W. Webster, President of the State Board of Health; Miss Jane Addams; Professor Charles Henderson, of the University of Chicago; Drs. Cigrand and Mix all commenting on the great value of the exhibition, made eloquent pleas for further activity and coöperation.

The second conference presided over by Dr. H. B. Favill, dealt with the subject of the out-door treatment of tuberculosis. Drs. Evans, Pettit, Gray and Miss Harriet Fulmer were the speakers. The great importance of an out-door life for tuberculous patients and those predisposed to the disease was emphasized, and it was particularly significant that a warning note was sounded against exaggerations and fadishness and the indiscriminate use or abuse of this most valuable method by those unfamiliar with its effects. Concrete plans for the proper carrying out of out-door treatment were presented by the speakers, Dr. Pettit describing his tent colony at Ottawa, Miss Fulmer and Dr. Sachs announcing the completed arrangements for a tent camp near Chicago for the consumptive patients of the Visiting Nurse Association and Dr. Gray speaking of the roof-garden school of the dispensary of the Chicago Tuberculosis Institute. Far-away climates as such did not receive any recommendation. Illinois air apparently having finally conquered the unanimous approval. How different from a few years ago!

The third conference, under the presidency of Prof. Graham Taylor, was devoted to the discussion of the very important relationship of "Tuberculosis and the Industrial Workers." Dr. Alice Hamilton, of Hull House, gave an admirable exposé of the subject, showing statistically how very prominent was the share of loss to the industrial workers through tuberculosis. Mr. George W. Perkins, the president of the Cigarmakers Union, gave a most graphic and accurate description of the situation among this particular class of workers, showing distinctly how necessary were preventive efforts. Dr. A. C. Klebs showed the preventive methods employed in other countries by industrial workers against this disease, eulogizing especially the measures made possible through the system of obligatory workingmens' insurance in Germany and through cooperation of benefit societies in England and France. Dr. Caroline Hedger, and Mr. Bisno, of the Garment Workers, also emphasized the views of the other speakers from the standpoint of their experiences.

The fourth conference, under the chairmanship of Mr. C. S. Kingsley, of the Relief and Aid Society, dealt with the subject of "Charity Organization and Tuberculosis." The question of lodging-house infection and institutional provision for consumptives was discussed by the speakers. The insanitary condition of Chicago lodging houses was again censured, as well as the total inadequacy of institutional provision and the great necessity for activity in these directions. Mr. Bicknell, of the Bureau of Charities; Mr. Mullenbach, of the Municipal Lodging House; Mr. Riddle, of Hull House; Dr. Podstata, superintendent of the Cook County Institutions of Dunning, and Mr. Ball, of the City Homes

Association, were the principal speakers.

The fifth conference, on "School and Tuberculosis," presided over by Mr. Cooley, the superintendent of schools, brought out expressions of interesting opinions from teachers present in the audience. Rev. R. A. White, of the Board of Education; Miss Fulmer, Drs. Churchill and Ryerson and Miss Jane Addams were the speakers, all insisting unanimously on the great importance of hygiene and sanitation for children at school age, as a powerful means of tuberculosis prevention. The insufficiency of artificial systems of ventilation and the objectionable methods of cleaning of school rooms in Chicago, were forcibly brought out. Also the necessity of providing for tuberculous children and teachers, who are to be excluded hereafter from Chicago schools. In this direction, attention was called by Miss Addams to the system of out-door schools, so-called forest schools in vogue in Germany, which had done a great amount of good to such children. Lantern slides illustrated scenes from such schools and created much interest.

The first two weeks of the exhibition found a fitting termination in the Western Tubereulosis Conference, held at Handel Hall, on April 14th, under the auspices of the Chicago Medical Society. Dr. C. S. Bacon, of this society. opened the conference, introducing the acting president, Dr. H. B. Favill. On the platform were seated, besides the president and the guests of honor, Drs. Flick, of Philadelphia and Knopf, of New York. the principal representatives of anti-tuberculosis work in Chicago, Illinois and the neighboring states. Among these out-of-town guests were Drs. Bracken, of Minneapolis, Hurty, of Indian-

apolis, Kime, of Fort Dodge, Iowa. Lowman, of Cleveland, Miller and Eckhard, of Peoria, Porter, of St. Louis, Probst, Warner and Grant, of Columbus, Stoddard, Scaman and Schmitt, of Milwaukee. Dr. L. F. Flick. the acting president of the National Association for the Study and Prevention of Tuberculosis, gave a very forceful invitation to all those in the West working in tuberculosis to join the ranks of the National Association, which represented the best and highest endeavors in this country in this common cause. Dr. S. A. Knopf, so well known through his writings on the subject, in a brilliant address, carried away the audience in a storm of applause. His forceful arraignment of the patent-medicine evil, of alcoholism, of all the bad and dirty habits in the home and on the streets, as causes of this disease, were portrayed in vivid words.

After short speeches and discussion by the other visitors, certain resolutions were adopted unanimously and it may be hoped that they will serve as a guidance in future efforts. The resolutions adopted were:

Resolved, That it is the sense of this conference that in the erection of state sanatoria, the greatest economy and simplicity possible should be followed in construction, consistent with the proper treatment of patients and its function as an educational institution.

Resolved, That there should be an active working organization in every county and city for the purpose of making effective a co-operation of all civic and social forces that can avail against tuberculosis.

Whereas, It is believed that the present conference has encouraged the public interest in the subject of tuberculosis and is expected to assist materially in the eradication of this disease, be it

Resolved, That the chair appoint a committee of five (5), with power to make arrangements for another conference to be held next year at a place easily accessible to those residing in the middle west.

Resolved, That this committee be instructed to prepare a program and make all necessary arrangements for the next conference, and that it be given power to select additional members to assist in its work.

Resolved, That said committee of five, to be appointed by the chair, shall consist of members of the National Association for the Study and Prevention of Tuberculosis.

Resolved, That this conference be known as the "Western Tuberculosis Conference."

As members of the committee provided by this last resolution the chair appointed the following: Drs. Bracken, Kime, Lowman, Porter, Klebs.* St. Paul and Cleveland have already spoken for the next conference.

The last two weeks of the exhibition were utilized to give associations a chance to acquaint themselves thoroughly with the exhibits. There were special nurses', students' and labor organization days and also two conferences for the discussion of topics of particular interest and importance to physicians. The first, presided over by Dr. R. H. Babcock, took up the subject of early recognition of the disease, Drs. Klebs, Walls, Davis and Holmes participating. The last conference, under Dr. N. S. Davis, defined the duties of the practitioner in regard to tuberculosis, with Drs. Preble, Quinc and Babcock as speakers.

A. C. K.

^{*} All those interested in the success of the next conference are requested to make succestions to and correspond with the chairman, Dr. H. M. Bracken, Minneapolis, Minn., and the other members of the committee.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular monthly and annual meeting of the Adams County Medical Society was held April 9 at 11 a.m. in Quincy, with President John H. Koch in the chair. Those present were Drs. Ashton, Bates, Erieson, Grimes, Gilliland, Knox, Koch, Kidd, Harrison, Lierle, Niekerson, Pfeisser, Robbins, Rice, Rosenthal, G. B. Shawgo, K. Shawgo, Wells, W. W. Williams, J. G. Williams and Markey. The following officers were elected for the ensuing year: President, J. M. Grimes, Camp Point; first vice-president, H. Hart, Quincy; second vice-president, L. B. Ashton, Quincy; treasurer, R. J. Christie, Jr., Quincy; secretary, George E. Rosenthal, Quincy; censors, Joseph Robbins, G. H. Rice, E. B. Montgomery, Quincy.

In the evening Dr. J. N. McCormaek, of Kentucky, gave a popular lecture at Turner Hall, which was well attended. Responses were made by prominent citizens. At 10:30 p. m. Dr. McCormack addressed the profession and much enthusiasm was manifested along lines tending toward betterment of conditions among the profession. A committee was appointed to organize joint meetings with various workers and to undertake the establishment of postgraduate work. A rising vote of thanks was tendered Dr. McCormack and Dr. Norbury, of Jacksonville, who accompanied him.

George E. Rosenthal, Secretary.

CASS COUNTY.

The regular meeting of the Cass County Medical Society was held in Virginia on the afternoon of April 10. Owing to the absence of President Franken, Dr. C. M. Hubbard, first vice-president, occupied the chair. Members present were Drs. George Bly, Palmer, Schweer, Garm, Soule, Huston, Hubbard, Lyle, McGee, Glenn, Gailey. The business matters of the society were hurriedly passed over owing to the fact that Dr. J. N. McCormack was to address the society. This being our annual meeting, the election of officers resulted as follows: Dr. C. M. Hubbard, Virginia, president; Dr. D. L. Gailey, Ashland, vice-president; Dr. J. A. McGee, Virginia, secretary; Dr. A. R. Lyle, Virginia, treasurer; Drs. George Bly, Beardstown, and J. A. Glenn, Ashland, delegates to the state meeting, with Drs. M. J. Palmer and R. H. Garm, Beardstown, alternates. The treasurer's report was read, showing the amount of \$21.47 on hand at present time. Our society is growing, having received three new members within the last year, making a total of twenty-two members out of thirty-one physicians in Cass County.

Dr. McCormack's address was terse, full of good advice and to the point. Among his remarks he advocated the formation of county postgraduate schools, which seemed to meet the approval of all physicians present and which will, perhaps, be acted upon in this county. A fair number of laymen were present and went away feeling repaid for their time in coming to listen to this noted man. Dr. McCormack is certainly doing a splendid work, and if more of the people could hear him there is no doubt but a better understanding would be established between the physicians and the people in general.

J. A. McGee, Secretary.

CHICAGO MEDICAL SOCIETY.

A joint meeting of the Chicago Laryngological and Otological Society and the Chicago Medical Society was held March 7, 1906, with Dr. Otto T. Freer in the chair. Dr. John G. Wilson, University of Chicago, read a paper entitled "Some Anatomic and Physiologic Considerations with Reference to the Faucial Tonsil."

SOME POINTS ON THE ANATOMY AND PHYSIOLOGY OF THE TONSIL.

Dr. J. Gordon Wilson, CHICAGO.

(Abstract.)

The palatine tonsils are part of a ring of lymph follicles and lymphatic vessels which surround the pharynx, called "Waldeyer's ring." This ring consists not only of well-defined masses surrounded by a connective tissue capsule, as seen in the pharyngeal tonsil and the faucial tonsil, but also of more or less irregular masses, as in the soft palate, and of continuous layers, as at the base of the tongue and round the tube. The normal size of the faucial tonsil is difficult to estimate, owing to the frequency of inflammation in it. A fair average might be: length, 20 mm.; breadth, 18 mm.; thickness, 13 mm. The tonsil reaches maturity about the fifth year. It is covered by a capsule of connective tissue which is on an average about 1 mm. thick. In enlargement of the tonsils it has been demonstrated that the connective tissue capsule does not relatively thicken. In man the blood supply comes from the facial, either through a tonsillar artery or through the tonsillar branch of the ascending palatine. Branches from the lingual go to the pillars of the fauces and to the plica triangularis. A branch of the descending palatine lies in the soft palate near the supratonsillar fossa.

The tonsillar artery lies between the internal pterygoid muscle and the pharynx in the pterygo-pharyngeal space. This space is of irregular conieal form and contains loose, fatty areolar tissue. The relation of the external and internal earotid arteries to this space renders it impossible to injure them in tonsillar operations. The semi-fluid fat in this space easily enables the operator to pull forward the tonsil so that these arteries are still further removed from chances of injury. Hemorrhage most often comes from the tonsillar artery, but may also come from branches of the lingual.

There is evidence to show that the tonsil can not be classed as a residual organ. The physiologic function of the tonsil is associated with the active processes at the upper end of the alimentary tract, one of which may well be to act as a defensive barrier to microörganisms.

Dr. William E. Casselberry read a paper entitled "The Indications for Operative Interference in Disease of the Faucial Tonsils and the Methods of Choice in Operating."

THE INDICATIONS FOR SURGICAL INTERFERENCE IN DISEASE OF THE FAUCIAL TONSILS AND THE METHODS OF CHOICE IN OPERATING—AN ANALYSIS OF 480 CASES.

W. E. CASSELBERRY, M.D.

Professor of Laryngology and Rhinology in Northwestern University Medical School; Laryngologist to St. Luke's and Wesley Hospitals.

CHICAGO.

The indications for surgical interference in disease of the faucial tonsils are both systemic and local. In certain types of "rheumatism," endocarditis, nephritis and phlebitis, clinical observation indicates that the tonsils serve as portals of infection. Recently three cases of serious endocarditis, in which the initial lesion was an acute tonsillitis, have passed under my notice, and these were children maimed for life by the resulting valvular defects. Nephritis I have repeatedly observed to follow tonsillitis, and, while it is usually temporary, I recall one instance in particular, the youthful son of a prominent physician, in whom the albuminuria with casts persisted for years. My mention of phlebitis is based on a single ease, a robust man, who, after an acute inflammation of the tonsils and without other cause, was affected by an obstructive inflammation of the saphenous vein, which was ascribed with such conviction by his physicians to the initial infection in the throat that he applied for a tonsillectomy. In none of these cases were the tonsils greatly enlarged, although they may be so; many of them fall

under the now familiar designation, "small but diseased tonsils," while in rare instances there is no chronic structural change apparent.

Acute articular rheumatism¹ is difficult to differentiate from arthritis of the type known to follow such acute infectious diseases as scarlet fever, smallpox, pneumonia, etc. Most of the cases of so-called "rheumatism" following tonsillitis doubtless belong to this class of secondary arthritis. To exemplify this group I will mention briefly the case of a lad whose tonsils were much hypertrophied and contained multiple puriform foci. Attacks of polyarthritis, supposedly "rheumatism," usually followed the attacks of acute tonsillitis, the patient in consequence being a chronic invalid. Tonsillectomy suspended promptly and perma nently both the tonsillitis and the secondary arthritis.

This and other clinical evidence is confirmed by the studies of Goodale,2 who found, in about one-third of the cases of tonsillitis, minute intrafollicular abscesses. In certain specimens it was possible, microscopically, to trace the polynuclear leucocytes as they wandered from these little abscesses along the lymph channels to the tonsil base. He quotes Pireras as having traced in animal experiments pathogenic germs, thence to the adjacent cervical glands. Jonathan Wright, while denying that Nature's conditions of infection and immunity can be thus paralleled in the laboratory, still concedes the main fact, from his clinical, and microscopic evidence, that pathogenic bacteria are absorbed through the tonsillar epithelium.

Acute tonsillitis itself is a sufficient evil; it impairs a child's vigor, retards development and interrupts its studies. An attack now and then may be disregarded, but frequently recurrent tonsillitis, especially in view of possible complications, I regard as an indication for tonsillectomy. Usually the tonsils are at the same time otherwise diseased.

Of the systemic infections the gravest of all with respect to the tonsils is tuberculosis. Their crypts are points of inferior resistance to tubercle bacilli, for the reason that here the epithelium has little coherence and the further defense inherent to protoplasm proves inadequate. They pass with the current into the tonsillar lymph spaces, where most of the bacilli themselves disappear from microscopic view, having first produced characteristic histologic tubercles, but no lesions visible to the naked eye. I have rarely seen, clinically, tuberculosis of the tonsils, yet Wood's postmortem pathologic diagnoses show that in 69 per cent. of advanced cases of pulmonary tuberculosis the tonsils are tuberculous, and that in 5 per cent. of apparently simple hypertrophy of tonsils and adenoids the excised specimens are tuberculous. However, that enough tubercle bacilli can succeed in passing through the tonsils to infect the cervical glands has been proven by George B. Woods with domestic pigs, which were killed from twenty to forty days after swabbing of the tonsils with a culture. His specimens, which I have had opportunity personally to examine, are very convincing, not only of the course of the infection from the tonsils to the cervical glands, but thence also through the system.

Simple pyogenic cervical adenitis and tuberculosis of the cervical lymphatic glands are so related that they are necessarily considered together. Pyogenic infection transmitted from the tonsils is the most prolific primary cause of glandular hyperplasia. With amelioration of the tonsillar inflammation the lymphatic glandular enlargement subsides, but not wholly, as it is prone to be still worse with the next attack. If now, before the glandular enlargement becomes permanently established, the tonsils be excised, the cervical adenitis will in time wholly disappear. In illustration of this type of simple pyogenic adenitis I may gite the

^{1.} Barstow: Ref. Handbook Med. Sciences, New Ed., 1893. 2. Goodale: Trans. of Am. Laryn. Assoc., 1902.

^{3.} Pirera: Archiv. Ital. Assoc., 1904, p. 210 (Wood). Ital. dl Laryngol., April, 1900, Trans. Sec. Laryn. Am. Med.

^{4.} Jonathan Wright: New York Medical Journal, Jan. 6, 1906, Reprint p. 2. 5. Jonathan Wright: Loc. cit. Reprint p. 12. 6. Goodale: Archiv. für Laryn. and Rhinol., 1897, vol. vii, p. 90.

^{7.} George B. Wood, Jour. Am. Med. Assoc., 1904. Section of Laryngol. and Otol. Trans. p. 212.

^{8.} Loe. cit.

case of Miss D., aged 14, daughter of a physician, whose glandular enlargement receded promptly after tonsillectomy and disappeared entirely in the course of a year. If, however, the cervical glandular enlargement has become persistent it is probable that a tuberculous infection has been added to the pyogenic hyperplasia or else it has been tuberculous from the start. The two infections coexist more or less. It favors recovery as well as prophylaxis to act upon the theory that continued pyogenic invasion from the tonsils predisposes the cervical lymphatic glands to tuberculosis, as even in the tuberculous type the swellings usually diminish after tonsillectomy, although more slowly and not often completely. These opinions, based upon personal clinical records, are supported in the main by Nichol, whose investigation embraced 500 cases of cervical adenitis, mostly operated in the Royal Hospital for Children. Further, he estimates the proportion of pyogenic to tuberculous cases as two to three. For these reasons one must regard cervical adenitis, in any degree approaching persistency, as an indication for immediate tonsillectomy.

Another indication for surgical interference is the systemic toxemia which may result from the putrefaction of accumulated débris in the crypts of the tonsil. The symptoms are not very definite, a pallid, muddy or blemished complexion, impairment of health and strength and dyspeptic complaints being so general that when due to this cause it is apt to be only through the patient's own intuition, as suggested by a nauseating odor and taste, that the fact is first suspected. Confirmation is established, in reasonable numbers, through disappearance of the symptoms after tonsillectomy, the size, depth and high degree of fetidness of the concretions thus disclosed being sometimes amazing.

Tonsillar concretions, moreover, are responsible for much local discomfort in the throat. The "submerged tonsil," the "small but diseased tonsil" and the hidden "velar lobe" of the tonsil are all descriptive of conditions which impede the drainage of the crypts. The mysteries of chronic pharyngitis, of red and sensitive faucial pillars and peritonsillar abscess are dispelled when during retraction by a hook of the covering plica triangularis and muscular anterior pillar cheesy concretions are forced into view from previously hidden, inverted or constricted crypts.

To meet most of these indications effectively, experience teaches that the excision must be reasonably thorough, else in the stumps tonsillitis is liable to recur, concretions still to form or hypertrophy to redevelop. The adoption of tonsillectomy as the ideal operation, even though this ideal be not always exactly fulfilled, lends more importance to the inquiry with respect to the protective and other functions of the tonsils. The tonsillar crypts always contain pathogenic germs against which Nature seeks to provide by phagocytosis, the engaging polynuclear neutrophiles, however, coming not from the lymphoid tissue, of per se, but from the blood, so that this is a protection only against the evil of the tonsils themselves. More stress is now laid upon the bactericidal properties of the juice of lymphoid glands and upon the vasotonic effects of an internal secretion, but it will be remembered that aside from the tonsils there are other lymphoid tissues which seemingly are quite adequate to eare for these functions. Certain it is that no functional ill effects are discernible from tonsillectomy.

The advancing popularity of the newer term tonsillectomy rather than tonsillotomy is indicative of a general attitude favorable to total excision of the faucial tonsils, and I am convinced that the more nearly we can conform to this ideal, that is, within the limits of expediency and safety, the more satisfactory will be the results. In certain cases complete enucleation is accomplished easily and perhaps more safely than partial abscission, while in others, so irregularly and deeply may the tonsil extend, so infolded by muscular pillars and adherent to fibrous capsule may it be found that to follow it to its ultimate recesses in an effort to remove every fragment will require the highest degree of skill and the best judgment in order to avoid hazard. Close and deep dissection may be required rather than

^{9.} Nichol-Glasgow Med. Jour., Jan. 1896.

^{10.} Goodale: Loc. cit.

^{11.} Jonathan Wright; Jour. of Laryn. and Rhin., 1901, p. 639.

^{12.} Masini.

easy enucleation, and the liability to troublesome hemorrhage is thereby increased.

The methods of choice in operating have reference particularly to the avoidance of hazard, the minimizing of pain and the effectiveness, permanence and harmlessness of the result. In order better to judge, I have scrutinized my records of faucial tonsil operations, which total 480 private cases, most of them double, in many of which opportunities were afforded years after to determine the final condition.

Of children under 14 years of age, operated upon under general anesthesia, there are 165, of whom nine-tenths took ether alone or preceded by a few whiffs of A. C. E. mixture, the ether serving satisfactorily for the operation and without accident or detriment of any sort. Even the usual slight risk of ether anesthesia is probably further lessened by the brevity of this operation.

The present technic is briefly as follows: When well etherized the patient's head and shoulders are raised on the operating table by a firm compact roll, made by winding a pillow endwise into a sheet. The membraneous tense edge of the anterior faucial pillar is then "nicked" near its junction with the velum, which helps to disengage the tonsil, including the velar lobe, from its socket. The writer's simplified plain ring tonsillotome, not too sharp, is adjusted, the tonsil drawn into it by special grasping forceps and shelled out from its capsule rather than cut through; instantly the same instruments are returned again and again for the velar lobe or any other escaping fragments. Blood having gathered, a slight gurgle warns one to lower and turn the patient's head for its escape, this bleeding interval being used to go on with the ancethetic before repeating the same procedure upon the other side.

The other one-tenth of this anesthesia had gas or bromid of ethyl, the suitability of which for modern tonsillectomy is limited to easy cases of the peduneulated type, which do not require prolonged dissection. Of children under 14, but mostly over 10 years of age, operated with local cocain anesthesia, there are 112. A fresh 5 per cent. cocain solution supplemented by adrenalin is applied by repeated spraying, care being taken to direct it by an angular spray tip into the crypts and pillar crevices. Also, to minimize pain, the tonsillotome in this class should be very sharp, but its method of use is the same, and in spite of the patient's disquietude one should quickly search for and excise each and all of the fragments which escape the primary cut. Whether a single or double tonsillectomy is thus made at a sitting and the exact degree of thoroughness attained will depend upon the child's endurance and other circumstances. In these two groups, which aggregate 277 children under 14 years, there has been no case of unusual hemorrhage, although the fact that it might occur sometimes influences me in the unanesthetized cases to operate only one side at a time.

The final results can be compared only in a general way. Acute tonsillitis in eertain susceptible persons is liable to recur in the merest remaining trace of tonsillar tissue, but the disease being now mild and infrequent it is unfair to rank it as a regular occurrence. On the other hand, if a third or half the tonsil be left it is prone to grow again and be subject to all the old complaints. Also, if in an operation for the prevention of peritonsillar abscess the velar lobe be overlooked the result will be ineffective.

I have on record final information obtained indirectly from the parents, friends or physicians, or directly by reëxamination, in about two-fifths of the above enumerated operations on children, from which it is estimated that the ratio of recurrences in the other series is 1.6 and in the cocain series 1.4. These figures favor the anesthetic method; moreover, most of the recurrences having occurred in the cases of an early period, when incomplete tonsillotomy was in vogue, they also argue in favor of modern tonsillectomy. To avoid misapprehension I should state that this ratio does not apply to adenoid growths, which in my experience have very rarely recurred, nor does it mean that actual hypertrophy of the faucial tonsils redeveloped so often, but only that some form of troublesome tonsillar disease again appeared.

I have commented on the total absence of unusual hemorrhage in each of the two series of operations on children under 14 years of age. In contrast, out of 203

operations, mostly double, in adult life seriously troublesome hemorrhage occurred in fourteen, two of which were in persons as young as 15 years. The effort to avoid this contingency has led to a variety of methods in operating on adults, no one of which is universally suitable. In recent years I have given first consideration to the cold-wire snare, regarding it as a method of comparative, although not perfect, safety. One needs usually to expose the tonsillar base by preliminary shallow incisions above and below, thus preparing a place for the No. 6 wire loop, by which the bulk of the excision is made. Any fragments which escape the snare are at once grasped by a dull-edged crushing forceps and further detached by scissors. The author's snare, as perfected for this purpose, can be manipulated by one hand, has strength without clumsiness and is suitable also for nasal use. As general anesthesia is not used in adults unless demanded by the patient, the method by the cold snare has proven painful in spite of cocain, so that in the selection of eases regard must be paid to their fortitude, which explains why in this series of 203 private adult patients I have recorded its use in only sixteen. The eautery snare, which was earlier employed in an equal number, I now seldom use, and "eautery dissection" never appealed to me, although it has its earnest advocates. Of the fourteen hemorrhages mentioned, one was a cautery-snare ease, three were incident to fragmental dissection and ten followed the use of the tonsillotome. None resulted from the cold snare nor has any occurred from it as yet in the additional cold-snare eases in my elinie.

I give second consideration to what I will term the fragmental method, "more cellement" of the French. One or more fragments are excised at a sitting by means of seissors or tonsil punch, completion being reached in several sittings. Naturally, the forty-eight cases which compose this group include chiefly those of "small but diseased tonsils." Seven cases of recurrent peritonsillar abscess were thus remedied, the method being especially adapted for cautious excision of the velar lobe, while out of ten additional cases of peritonsillar abscess operated otherwise two suffered recurrence. In the three hemorrhage cases which arose out of the forty-eight subjected to the fragmental method, the spurting vessels were the

more readily controlled by reason of the limited field of operation.

The tonsillotome as a method of choice for adults I long since relegated to third place, hence it is a little surprising to find from my records that as many as 122 out of 203 adults were operated by means of it. Some, though classed as adults, were just out of childhood, while in others the tonsils still retained a youthful softness of texture. Often the alternative was presented of doing it in this quick familiar manner or not at all; indeed, the tonsillotome may be selected merely as a matter of expediency, provided one has at hand the best hemostatic appliances and feels competent to cope with a serious hemorrhage, should it occur, as in fact it did in ten out of the 122, or, to state the ratio in terms of single tonsils, 1:25.

In conclusion it may not be superfluous to state that in no instance has any ultimate harm resulted from the operation—nothing but good. Lambert Lack¹³ reports a case of loss of singing voice. My series includes but eight vocalists and perhaps an equal number of public speakers, in all of whom the voice was improved, but the number would be larger were it not that in singers I have limited the operation to those in whom the tonsillar disease itself seemed about to destroy the voice, so I believe that vocalists form no exception to the rule that wherever the tonsillectomy is really indicated enhanced general vigor and vocal sturdiness may be expected to result from the operation.

Before these papers were discussed Dr. J. Holinger asked permission to present two patients, both of whom had been operated on for thrombo-phlebitis of the lateral and sigmoid sinus. In the first case, a boy of 5 years, the suppurative process progressed downward to the jugular bulb and vein, which were opened. The facial nerve was injured, as is hardly avoidable in these cases. The boy had three distinct septic embolisms of the lungs from the thrombo-phlebitis of the

^{13.} Lambert Lack: Jour. of Laryn, and Rhinol., 1901, p. 600.

jugular vein and jugular bulb, with fever, pleuritis exudation and coma. Each time he recovered.

The second ease, a boy of 12, showed the opposite progress of suppuration of the thrombo-phlebitis, that is, backward in the course of the sinus toward the occiput. The eases were so clear that without any further explanation the members wer invited to examine the patients.

DISCUSSION ON THE PAPERS OF DRS. WILSON AND CASSELBERRY.

Dr. Arthur M. Corwin:—The adenoid tissue included between the pillars of the fauces on each side, which we call the faucial tonsil, should be in prominence little more than several thicknesses of ordinary mucous membrane; normally it should not project as a rounded body. When it does it is abnormal, and the fact that a large majority of people are abnormal in this regard is attested by the presence in varying degree of more than this almost invisible deposit of adenoid tissue. But to say that we should remove all tonsils simply because they are visible or even moderately enlarged is an exaggeration. We should no more think of doing that than of cutting off every spur or reducing every trivial deflection of the nasal septum.

The indications, as I see them, for an operation on the tonsil by one of the many methods in vogue would seem to fall under four heads. In the first place we operate on tonsils by whatever method we select when there is a history in the case, whether it be a child or adult, of acute inflammation; whether the inflammation is of the type of the ordinary follicular tonsillitis, which is a grave disease with its sequel of paratonsillar abseess and dangers of systemic invasion, or whether the inflammation takes a more mild type, frequent, periodic or occasional, of what is little more than a catarrhal inflammation, superficial in its character, without exudate, without follicular involvement and with little enlargement. We all see many such eases. In all such instances the indication is plainly to destroy the seat of disease, the tonsil.

The second indication for operating upon tonsils would be some mechanical obstruction to voice production, as in singers, in students of the voice, in public speakers and in children who have a throaty, stuffy voice, even without inflammatory trouble or adenoids, the faucial tonsils simply being larger or smaller and

mechanically interfering with phonation.

The third indication for interference is based upon a patient's complaint of bad breath or disagreeable taste, or both. How often have we had young ladies come to us with this symptom—foul breath periodically, or most of the time, chiefly periodically. We have carefully inspected the nose, reduced the swelling by coeain and adrenalin to facilitate inspection, in order to eliminate any possible localization of decomposing secretion or earies and to eliminate also the purulent discharges from the various sinuses. We have inspected carefully the vault of the pharynx. As we all know, there are eases of chronic and persistent accumulations of secretion in this region, which may come away in a lump and may be the source of more or less odor. We have inspected the teeth, the alveolar process, and we have explored the lower respiratory tract to rule out in certain selected cases the presence of bronchiectasis or other bronchial or pulmonary causes of foul breath. We have inquired earefully into the digestive tract; we have excluded the heavily coated tongue as the seat of odor, whether it be the result of digestive trouble, or due to mouth breathing from nasal stenosis, and we have turned our batteries upon the tonsil, not necessarily the large and prominent tonsil, full of follicular openings, but we have made the hidden and seemingly insignificant tonsil look us squarely in the face, so to speak, as in turning it out of its own bed by pressing firmly with the tongue depressor in front of the tonsil while the patient gagged; or we have retracted the anterior pillar with a blunt hook of aluminum wire. We have in this manner, possibly in the case of a small tonsil, found no follicular involvement. In the absence of such cryptic localization, the deep fossa, referred to in the paper, in front of the tonsil may be at fault, is the seat of decomposing or purulent secretion, and this we find by passing into it a probe or even the right-angle tip of the atomizer.

And under the circumstances these can be best attacked, not by tonsillotome, not by cutting instruments, although cach operator has his choice in these matters,

but preferably by the galvano-cautery, rightly used.

Lastly, we operate on tonsils because of the danger of infection through them. This is especially true in children, whose adenoid tissue is so succulent and vulnerable; but it also applies to medical students, doctors and nurses. No doctor, nurse or medical student should overlook his tonsils as being portals of entry which will subject him to unusual danger. As the tonsil becomes older and more fibrous, the danger becomes less, but correspondingly more from hemorrhage in case of operation.

With regard to the method of operating, the cautery, in later years, has become more popular with some of us, and is very effective when rightly used. The one rule I seek to apply in using the cautery is not to burn the pillars or the underlying muscular structure surrounding the tonsil. If we do that we not only cause a greater reaction, but greater pain, for every time the burnt muscle is stretched there is immense discomfort. Furthermore, if we burn the muscles we will have scar tissue, which will lessen their flexibility and invite deformity. In order to avoid this I retract the anterior pillar with a blunt hook. The tonsil may then be fairly enucleated with the cautery, or slit up repeatedly from above downward, and the cul-de-sac laid wide open. In separating the tonsil from the anterior pillar with the eautery in a ease of adhesions, it is highly sat-



Ingals Tonsil Forceps.

isfactory to leave the sixteenth of an inch of adenoid tissue along the inner posterior surface of the anterior pillar, which subsequently contracts, but which allows the muscle to go unscathed.

I am very fond of the use of the cautery, even in very greatly hypertrophied cases. Allow me, finally, to speak briefly of an operation with which you are all more or less familiar, namely, the Ingals operation for the removal of the tonsil by the snare. It is an operation that I would like to dilate on for a considerable time, not because I happen to have been reared in the Ingals school of our specialty, and my foundations were laid there, not because the procedure has some man's name tied to it, but because I have found this operation, when compared with many other surgical measures, most satisfactory. It fills the bill perfectly in children; it delivers the goods to the best advantage in some adults. The patient is put under chloroform or some other anesthetic, the gag inserted with a light, whether reflected or not; the anterior and posterior pillars are separated by a proper instrument, and this instrument, the Ingals tonsil forceps, is applied from above downward, and compresses the tonsil between these blades.

A cold wire snare, threaded with No. 5 steel piano wire, is then slid over the locked handles of the forceps and the tonsil is cut off, the loop of the snare being contracted by the milled wheel. The child is on its side, with head over the table, and is shifted from one side to the other, the under tonsil being removed with each change of posture. The adenoids can be removed at the same sitting. Dr. Freer has added to this forceps an additional tooth which has an advantage in a small-sized tonsil, in that it will firmly attach itself without slipping.

Dr. William L. Ballenger:—I shall confine my remarks to a simple statement of a few facts, not attempting to enter into a general discussion of the two very excellent papers. I want to say that during the past four years it has been my endeavor to remove every tonsil with its capsule intact, though I have not been able to do so to my satisfaction until within the last six months. During this

short period I have usually removed the tonsil with its capsule or investing membrane intact. A microscopie examination only can show whether it is actually present or not. I have here a few tonsils I removed in series. They all have the investing membrane intact, or apparently so, except in two instances. The two tonsils were not removed by me, but by another surgeon in this city. I simply have them to compare with those in which the investing capsule is intact. I have made many observations on the tonsils I have removed, and I have found in nearly every instance that the crypts of the tonsil extend to within a millimeter of the depth of the tonsil; hence it is apparent, that unless we remove the tonsil with its investing membrane, we do not remove the deeper portion of the crypts where the chief seat of trouble lies, especially in the supratonsillar fossa. When the tonsillated disease. I will pass the tonsil usually escapes and is left to continue the tonsillar disease. I will pass the tonsil around and you will see the appearance of the tonsil when removed in its entirety. When thus removed, further diseased process is impossible.

The method of removal is simple. The tonsil is dissected from the tonsillar sinus with a small knife. The tonsil during the dissection is seized by a pair of vulsellum forceps, one prong in the supratonsillar space and the other at the inferior aspect of the tonsil. It is then drawn forcibly inward and forward toward the median line, away from the earotid, as shown by Professor Wilson. I did not before fully appreciate the value of such a procedure; I knew it enabled me to dissect the tonsil more easily. By thus pulling it toward the median line and forward, I pull it out of its socket or sinus. A large part of the tonsil lies underneath the anterior pillar, and in the supratonsillar fossa, and by pulling towards the median line it comes from its hiding-place, and its attachments are easily reached with a knife. It only takes a few moments to do the necessary dissecting. I have been able, in favorable cases, where the patients did not gag, to remove the tonsil in a minute, or even less than that time. Ordinarily it takes longer. It is not, however, a long operation. The operations I have performed have been chiefly done under cocain anesthesia. Latterly, I have injected cocain and adrenalin into the pillars at several points, and into the tonsil, and have thus rendered the operation practically a bloodless and painless one. I am not sure that this is a safe method. I have used it in forty or fifty cases without any untoward results. Dr. Moss of San Antonio, Texas, suggested this method to me. He has pursued it for a number of years without a dangerous incident, and I have been following it with equally good results for a brief time. I am fearful, however, of injecting cocain into the tissues.

Anyone who attempts to remove a tonsil in its entirety and succeeds in doing so, in my opinion is on the right road. There is no more reason why a tonsillectomy should not be considered a true surgical procedure than is an appendectomy. We aural and larvngeal surgeons should endeavor to make our operations surgical in character. We should get away from some of the old machine methods (the guillotine) and get down to true surgical principles in operating, and if we do this we will find that our results will be better, and that we will be more respected as surgeons in our line of work. My plea is for the abandonment of "machine surgery" and the adoption of true surgical technique in tonsillar operations.

Dr. Charles M. Robertson:—I would like to say a word or two on these papers. In regard to the different methods of enucleating the tonsil, I will try to illustrate the one I employ. Tonsils should be divided into two classes, the obstructive and the diseased, whether it is a long, flat, small or submerged tonsil. The submerged is the worst tonsil we have to deal with. The obstructive tonsil appears usually in children earlier than Dr. Wilson stated. My experience has taught me that the tonsil appears before the fifth year in a great many cases. I have often seen very large glands in children only a few months old. In fact, we find eases at five years of age with very much enlarged faucial glands. This is the only kind of tonsil, in my opinion, that indicates the tonsillotome. I do not believe tonsillotomy should be practiced in any other class, and then only for the relief of the obstruction to deglutition and respiration.

As regards the enucleation of the gland, it makes no practical difference how we enucleate it. Cautery dissection, dissecting with bistoury, the cold snare, are all good operations. My objection to the snare is that we have to dissect the gland very loose before we can put on the snare, and after we get the gland dissected it is easy to take a snip or two with a pair of shears and get it out without the bother of a snare. My experience teaches me that the snare operation is not always a bloodless one, as often there is serious hemorrhage following its use. The dissection is a little more slow than it ought to be, except in cases where there is no adhesion, or practically none between the pillar and the tonsil itself.

In using these various operations it occurred to me that if I could devise some way by which I could separate the pillar quickly, and introduce seissors to snip out the gland, I would have a model operation. So I have worked on that plan and desire to show you the instruments I use. Many of you are familiar with these instruments. The first instrument is a curved double-edged bistoury, curved on a radius of one centimeter, sharp on both sides, blunt at the end. This is introduced over the tonsil, and just behind the anterior pillar. Where there are no marked adhesions between the gland and pillar, you can tear loose the tonsil from the anterior pillar. In cases in which there are adhesions, where you cannot tear it loose with this bistoury, I have taken a pair of shears that work on the principle of an alligator forceps; they open horizontally. One blade is applied over the tonsil and behind the anterior pillar. I crowd it down behind the anterior pillar, taking great care not to get into the tonsil itself. If one is not careful he will leave that seventeenth of an inch of the tonsil that Dr. Corwin was talking about. After you separate the tonsil its fellow is separated in like manner. In separating the pillars, if you use a general anesthetic and there is hemorrhage, you can wait until the hemorrhage stops. This separating can be done in the first stage of anesthesia. I have used chloroform, never ether, because ether anesthesia takes too long, and my patient is more liable to vomit after it, thereby producing more liability of tearing away the elot and producing more hemorrhage. After the tonsil is separated from the anterior pillar (I pay no attention to the posterior pillar), I try to separate it above from the soft palate. If I do not do this I have trouble in dragging the tonsil down and in.

I have modified the Pynchon grasping forceps. This forceps is just as strong with claw teeth in the form of a double tenaculum. It is locked by a spring lock, so that if the patient should jump or move, or the tonsil is soft and flabby, as it often is, the foreeps cannot be pulled off. When I get hold of the tonsil with this instrument I know I have got it for keeps. If I lay down my instrument to get something else, if there is considerable hemorrhage, I know I have got the tonsil on my forceps any time I want it. I have made this instrument in the shape of a double tenaculum, because I have found all other forceps were liable to pull off, and the tonsil would drop down over the larynx, sometimes choking the patient before it could be removed. In grasping the tonsil I take particular pains to get the top of the gland and very well down near the base. I think the results of this operation depend very largely upon how we get hold of the gland. That is the trick or important part of the operation. After I have grasped the tonsil and pulled it well in and down, I fit a pair of shears over it. These are double-pointed shears, and made so that they fit in between the anterior and posterior pillars. You can open the blades wide apart with the least possible motion of the handles. In fitting the tonsil into the shears I make a slight motion with the shears, so that I get the tonsil out into the shears, delivering it by pulling on the forceps and pressing with the shears. Where the gland is high up into the soft tissues you can often deliver it into the shears like an onion, and then pecl it out instead of cutting it out.

One of the speakers said that in the punch operation for the removal of a small tonsil there was serious hemorrhage in some cases. We realize that in a small cicatricial stump we have cicatricial or fibrous tissue. Where we take out a small amount of fibrous tissue the vessels in that fibrous tissue are held open like a stove-pipe, because they cannot retract the fibrous tissue holding them open, and we therefore have hemorrhage. With the tonsillotome we will have more

hemorrhage than if we cut the tonsil out completely. In some cases I have found little arteries spurting blood clear across the pharynx. In these cases I grasp the tissue surrounding the vessel, cut it out, so as to get into the arcolar tissue beyond the gland. Then the vessel has a chance to retract and bleeding stops.

In regard to the anesthetic, ehloroform is dangerous in these eases, because they are all of a lymphatic disposition, and now that we have a new anesthetic in the shape of chlorid of ethyl gas, which is very convenient to use, we give it with safety and do our work quickly. We can give it continuously. Chlorid of ethyl gas is put up in metal tubes, with screw-top; you can introduce it through the nose. Of course, where there are large obstructive tonsils and adenoids, you first have to introduce it through the mouth, and afterward through the nose.

As my time for discussion has expired, I shall be pleased to show my method of ethyl anesthesia at a later time.

Dr. A. H. Andrews:—I want to protest against the inference that tonsillectomy is a simple, easy operation. Tonsillotomy is comparatively easy, but tonsillectomy is neither easy nor simple. Furthermore, I want to speak against one of the older methods of dealing with tonsils, namely, that of putting the cautery electrode in the crypts and then cutting out. I have enucleated a number of tonsils that have been treated in this way, and have found incarcerated cheesy material on the interior of the tonsil which could not get out and which was causing trouble.

Dr. Joseph C. Beek:—I was very much interested in Dr. Casselberry's paper for the particular reason that he alluded to tuberculosis, and recently in reading an article by Groebers, I find that he has advanced a new idea with regard to tubercular infection from the tonsil to the apex of the lungs directly without going through the circulation or the bronchial route. That is certainly an important point, so far as the pathology of the tonsil is concerned. Willimintzky, who has followed Groeber's work in experimenting, by injecting colored material into the tonsil and above the tonsil in animals, found colored particles along the lymphatics, in the lymphatic glands, and down to the apex of the lung into the lung itself, showing us that we may have tubercular infection from the tonsil as a very frequent cause. If that occurs in animals and as shown in some postmortem examinations that have been made in following tubercular infection in the lymphaties, to the apex of the lung, it proves that the tonsil is an atrium of infection. Rheumatic conditions have been alluded to, but it is most interesting to hear the statisties of many, particularly those of Pribrain, who has found in 80 per cent. of his cases angina and infection of the tonsil, showing how frequently the tonsil is involved in eases of acute articular rheumatism.

So far as the treatment of the tonsil is concerned I have practiced as nearly as possible tonsillectomy. I am pleased with the Robertson scissors and cold snare in adult cases. I use a tonsillotome in children without an anesthetic usually, with an assistant holding the child. In adults, I have also used a different instrument, that is, a heavy ring instrument, a cold écraseur on the order of a tonsillotome-snare as described by Ballenger. It works beautifully, and the tonsil Dr. Ballenger showed you was removed with that instrument.

Dr. Edwin Pynchon:—There has been considerable said about the undesirability of removing tonsils in many eases. I will say that I have been removing them for a good many years, and I acknowledge, at the present time I operate and remove tonsils which in former years I would not have removed, but I do not recall a ease wherein I removed a tonsil without getting beneficial results. I have used the various methods that the different speakers have mentioned. I have used the shears. I have been experimenting with shears sufficiently to get up some original shears, different from those of Dr. Robertson or any others I have seen. No method of operating with any of these cutting instruments is bloodless; we get more or less hemorrhage, which obscures the field of vision and increases the difficulty in operating to a considerable degree.

The method of eautery dissection has been touched on by two or three of the speakers, some of whom do not like it. They cannot be expected to like a thing unless they have practiced it. It is the only operation whereby the tonsil can be

removed bloodlessly. I cannot always do it bloodlessly. That I acknowledge. I have, however, on several ocasions removed a tonsil by cautery dissection without the loss of one drop of blood from the wound. Therefore, I am bound to like the operation, because, as I am working in a bloodless field, I can more thoroughly remove the tonsil than if the field is obscured by hemorrhage.

Dr. Clark W. Hawley:—I rise with a good deal of hesitation to say anything on these papers, because I am an oculist rather than a nose and throat man. I want to call your attention to a new anesthetic, somnoform. I believe if you will try it you will like it. I have tried it, and it is the most satisfactory anesthetic I have ever used. You can control the patient until you are through with your work. One of my recent patients was a little child with large polyps in one ear extending clear to the meatus. Some very large tonsils and adenoids had to be removed; I removed them all under somnoform in a most successful manner.

Dr. J. Frank McKinley:—I want to say a word or two with reference to tonsillotomy. I would mention cautery dissection simply to condemn it from what I have seen of it. I have seen it resorted to several times. As to the instruments, I have used nearly all of them that are on the market, and recently have come to use forceps and bistoury. I believe that a tonsil can be removed to the extent of there being only the sixteenth part of an inch left. This I do not hesitate to leave. In removing large fibrous tonsils, if I am likely to encounter hemorrhage, my practice is to swab the surface with sixty grains of nitrate of silver to the ounce, by means of which I usually control the hemorrhage. I have only had one case of hemorrhage in all the operations I have done. With sixty grains of nitrate of silver to the ounce, swabbing the cut surface, I have had no bad results; the hemorrhage has been controlled. The instruments I use are a blunt-pointed bistoury and Casselberry forceps.

Dr. William E. Casselberry:—I wish, first, on behalf of the laryngologists of this city, to thank Professor Wilson for his very beautiful anatomical preparations, which show exactly the arterial supply of the tonsils and the frequent penetration of tissue into capsule and muscle phases, upon which we have all desired explicit information, such as he has furnished us. I sincerely hope we will have the plates incorporated in our published proceedings for future reference. With regard to hemorrhage from the wounding of the pharyngeal artery, I am sure, he did not mean to say that the frequent hemorrhages which give operators so much trouble were from that artery; I am certain that in none of the cases of hemorrhage which I referred to was the ascending pharyngeal artery cut. Unless it occupies an anomalous situation it is too far posteriorly to be cut except by accident, or by a reckless operator. The tonsillar arteries, especially those from the ascending palatine, from the facial, and their muscular twigs, are large enough to bleed copiously in certain subjects. Why they do it in one subject and not in another we do not know. But a similar disparity is common to other parts of the body.

I did not refer to mechanical obstruction as an indication for operating, because, whilst I grant that it is one of the indications with respect to a faucial tonsil, still it belongs especially to the subject of adenoid growths, and I wished to avoid that subject in this paper. With respect to treatment by ignipuncture or galvanocautery puncture, it is, in my opinion, a valuable means, and yet I believe, where it is expedient so to do, it is better to remove the tonsil, or at least that part of the tonsil that is forming the concretions, for the reason that after ignipuncture occurs cicatricial contraction of the orifices and concretions again are formed.

With respect to the different instruments exhibited, any instrument in the hands of a surgeon who is skilled in its use can be employed, hence the question of the particular instrument is not of importance, except with respect to minimizing the danger of hemorrhage.

The choice between anesthetics carries more weight. I again suggest, unless one is inclined to run more risk than is necessary, to avoid chloroform in these

cases. I suggest this for the credit of the operation, and for the credit of the profession, for if you will consult the literature of anesthetic deaths which have taken place from this operation you will find they were chloroform cases. Tonsillar hypertrophy is one manifestation of the habitus lymphaticus in which chloroform is known to be dangerous. Ether is the preferable anesthetic; it is a feasible anesthetic, and it is, I believe, the safest anesthetic for these cases.

Dr. J. Holinger read a paper entitled, "Some Points in the Anatomy of the Temporal Bone to Be Considered in Connection with Mastoiditis Following Acute Suppurative Otitis Media."

Dr. T. M. Hardie followed with a paper on "Indications for Operative Interference in Cases of Mastoiditis Associated with Acute Suppurative Otitis Media."

THE INDICATIONS FOR OPERATIVE INTERFERENCE IN MASTOIDITIS ASSOCIATED WITH ACUTE SUPPURATIVE OTITIS MEDIA.

T. MELVILLE HARDIE, M.D. CHICAGO.

It is difficult to believe that practically all of the life-saving work in ear diseases has been limited to the past thirty-five years. Schwartze's work was published in 1873. Before that time mastoid operations were not performed unless a perforation of the cortex of the bone had taken place with consequent swelling, redness and fluctuation over the mastoid process, and even at the present time it is possible to meet practitioners of medicine who have never observed a case of mastoid inflammation which demanded operation, although they have had patients succumb to one or other of the well-known intracranial or general complications or sequelæ of the disease. It should be possible for every one to decide in a large proportion of cases whether operation is necessary. In the remaining number he can obtain assistance in every city which possesses an oculist and aurist who can use a head mirror and ear speculum as well as he can his ophthalmoscope.

The formulation of rules for the guidance of the inexperienced is always a difficult undertaking, and in this case the difficulty is increased from the fact that the structure of the parts involved and the virulence of the infection are so variable that the symptoms, subjective and objective, vary likewise, even when the pathologic conditions within the bone are similar, and my single suggestion is that if we err at all it should be on the side of safety. One should operate too early rather than too late. We may now proceed to an enumeration and description of

the symptoms which demand operation.

1. Pain.—Consider its duration, situation and severity. Pain in the mastoid region is a very common symptom. It is frequently described by the patient as deep, boring, nauseating, usually worse at night. It is often just severe enough to cause sleeplessness. It may have come on with the acute inflammation in the ear, or it may not develop until some days after the ear has begun to discharge, or it may begin only when the previously profuse discharge from the ear has suddenly stopped. Pain on pressure is a very important symptom of mastoid disease, but care must be taken both as to the method of eliciting tenderness and the situation chosen for its early demonstration. It must be remembered that very gentle pressure over an acutely inflamed periosteum might cause exeruciating pain, while deep pressure would be required to elicit pain when the inflammation was deeply seated in a bone, the structure of which was dense and compact. Pressure, therefore, with the end of the thumb or forefinger is to be slowly and steadily increased over the antrum, the mastoid tip and the region of the mastoid foramen. When endeavoring to elicit antrum tenderness the pressure is to be made just behind the auricular attachment and upward and backward from the external canal. Care must be taken if there is any question as to the coexistence of mastoid disease and furuncle of the external meatus that neither the ear nor the cartilaginous meatus is moved. When examining the tip be sure to compare the two sides, as the normal tip is often sensitive to pressure. Tenderness on pressure over the emissary vein which comes out through the mastoid foramen is also important, even although its presence does not indicate thrombosis of the

sinns. Finally, it is to be remembered that exceptional cases of mastoid disease exist in the absence of pain on pressure, and that not merely furuncle but occasional otalgias of hysterical or other origin may attempt to confuse us. Of equal import, therefore, from a diagnostic standpoint is the information we obtain by an examination of the external canal and drumhead.

2. The drumhead is markedly bulged forward or outward, frequently even after perforation has taken place. The perforation is oftenest situated on the apex of

this projection in the posterior superior quadrant of the drumhead.

3. Of even greater importance and, when it is present, a positive indication for performing the operation is bulging or sagging of the skin of the posterior superior wall of the meatus near the drumhead. In this case again external otitis (furuncle) is to be excluded.

Symptoms 2 and 3 require upon the part of the examiner ability to use the head mirror and ear speculum. Seeing in this case is not merely believing, but knowing, and the writer has always believed that the greatest service one can render his students in otology is to teach them the use of the mirror, so that their inspection of the drumhead might be adequate. It is worthy of mention that this symptom may be absent or not marked in cases in which, while there is free drain-

age from the middle ear and antrum, an abscess exists at the mastoid tip.

4. Discharge.—Very frequently the discharge of pus is profuse, and if this has lasted for a week or more the necessity for operation is probable. In many eases the discharge suddenly diminishes greatly or stops altogether, while the process in the mastoid progresses. A bacteriologic examination of the pus is advisable, since when the infection is due to streptococcus or pneumococcus operation should be performed earlier, and the infection is likely to be more severe. This is particularly true of cases occurring in children. The old-time symptom of edematous swelling, or swelling and reddening of the skin of the mastoid, very often indicates neglect. When this is marked the auricle stands away from the head, and if this occurs after the disease has existed for some weeks extensive absorption of bone in the process and frequently perforation of the cortex has taken place. If the swelling occurs early the abscess is superficial, or the edema and other inflammatory symptoms are due to the periostitis associated with furuncle of the canal.

5. Another local symptom is a marked increase in temperature of the affected

as compared with the sound mastoid.

6. Dullness on percussion of the mastoid performed with index finger or small hammer is to be regarded as of diagnostic value if it occurs in connection with other symptoms, especially if the dullness develops while the patient is under observation, but its value as a diagnostic aid is very limited, because there is sometimes no difference in the percussion sound of the healthy and the diseased mastoid, and the sound may differ in the two normal mastoids of the same individual. Further, it can not be used when there is swelling over the process.¹

7. Andrews' test to determine the density of the mastoid, and hence the presence or absence of disease, is open to the same objections, since it depends upon the same physical laws. Andrews' test² is made by placing a stethoscope with a small bell over the tip and placing the handle of a C₂ tuning fork over the antrum. It is found that when the mastoid cells are filled with pus or granulations, or when the density is increased from bone proliferation, the sound waves are transmitted to the ears of the examiner with greater intensity and for a longer time than occurs when the mastoid is normal. No traction should be made upon the soft tissues, since this will increase the sound.

8. I have said nothing as yet of the systemic manifestations of the disease, because they are not, as a rule, characteristic. Usually temperature, pulse and respiration are not materially affected, excepting in children, in whom the temperature may rise to 104 F., even in uncomplicated cases. While there is usually a slight elevation of temperature in adults, and frequently one going to 101 or 102 F., fever may be entirely lacking.³

^{1.} Politzer: Diseases of the Ear, p. 504.

^{2.} Laryngoscope, x, 416.

^{3.} Grunert: A. F. O., xxxv.

Decided prostration, indisposition to exertion, when present, are suggestive. Chills, vertigo, nausea, vomiting, sweating, are unusual excepting in the presence of intraeranial complications. These occur more frequently in chronic cases, but must always be looked for, since operation must be performed promptly in the event of their onset. Every case of acute mastoiditis complicating acute suppurative otitis media should, of eourse, have the benefit of preliminary antiphlogistic, or so-ealled abortive, treatment before operation upon the mastoid is undertaken. This will include the free incision of the drumhead in the upper posterior quadrant and including the sagging inner portion of the posterior wall. Cold, either by means of the Leiter eoil of aluminum or thin rubber ice bag, should be applied for not longer than forty-eight hours. Too prolonged use of the iee is to be avoided, since by its use the symptoms are masked. For the same reason analgesies should be administered only with eaution and stinginess. It has been elaimed by Politzer and others of his school that the surgeon should not operate, in the absence of symptoms pointing to intracranial involvement, before eight or ten days after the onset of mastoid symptoms, since it takes that time for the frequently disseminated foci of infection to eoalesce or to become evident to the eye of the operator, This eaution is to be observed particularly by surgeons who do not practice a complete exenteration of the process and eells extending into the zygoma. With this contention the writer is not in accord. The fact that many eases recover without operation does not balance the lives lost through delayed operation. The three considerations that all eases of acute suppurative otitis media exhibit, pathologically, antral and mastoid involvement, that eases of intracranial trouble are not infrequent, and that all of the ehronie eases which give us so much trouble were originally acute, should determine the earlier and more frequent performance of this very safe and rather easily performed operation.

DISCUSSION.

Dr. Joseph C. Beek:—While the hour is late, I cannot refrain from saying a word or two on these papers. With regard to perforation in cases of acute otitis media, with mastoid complications, there is one kind of perforation that I wish to speak of particularly, and that is the projection of the swollen mucous membrane through a small perforation situated high up. In many cases of this type there were grave complications or marked destruction of the mastoid without external manifestations. I believe those are the observations of most men who see these cases. In regard to the diagnostic point of auscultation of the mastoid antrum, by the Andrews method, I have been sadly disappointed with it, and have found the opposite to be true. I cannot go by that symptom. One case in particular Dr. Andrews saw with me, which at the operating table showed the opposite condition. Other men have told me that this test has been very useful to them.

Dr. Holinger, in closing the discussion on his part, said: The great variety in the anatomy of the temporal bone is partly dependent upon the general form of the skull. Long skulls have usually pneumatic mastoid processes, while in round skulls, all parts are more, so to say, crowded together. Among white as well as colored men, there are races or tribes who have mostly round, others mostly long skulls. I find the Polish a race of people with pronounced brachycephalic heads, and my experience with them has been such that I would like to caution any of you who may have to operate on mastoid processes of these people.

Some time ago I spoke to Professor Kummell, in Breslau, about this question, and he was very pronounced in his ideas, because he has had a great deal of experience. Professor Hartmann of Berlin ridiculed him. I agreed with Professor Hartmann that I did not believe there was such a pronounced difference. Since then I have had repeated experiences. I have found the lateral and sigmoid sinuses less than a millimeter to the rear of the external meatus, and the dura of the temporal lobe less than a millimeter in front of the middle ear and top of the external meatus. I think this suggestion may be of value to some of you.

Dr. Hardie, in closing the discussion, said:—I expected to be attacked be-

cause of my radical views. It has been customary in the past to wait until something happened in these cases of mastoiditis. While I believe it is possible sometimes to operate too early, I think it is better to operate too early than to wait a little too long.

A regular meeting was held March 14, 1906, with Dr. Charles Spencer Williamson in the chair. Dr. F. Kreissl reported the following cases:

ABDOMINAL AND VAGINAL URETERAL FISTULA CLOSED BY CATHE-TER LEFT IN INJURED URETER FOR THIRTEEN DAYS—PRIMARY TUBERCULOSIS OF THE BLADDER AND LOWER END OF THE URETER CURED BY LOCAL TREATMENT.

F. Kreissl, M.D. CHICAGO. (Abstract.)

After a difficult hysterectomy, which was performed by Dr. Stillman, of Chicago, Sept. 29, 1904, complicated by a psoas abscess and by unusual extensive adhesions, the evening temperature rose to 102, pulse 120, and remained so for four days. Emesis was present all this time. October 1 patient complained of pain in the right side. October 4 the evening temperature declined to 99.2, pulse to 86. While dressing the wound, October 5, a strong ammoniacal odor was noticed, and upon inspection a urinary fistula in the laparotomy wound and in the vaginal vault was discovered, through which urine leaked freely for the following eight days. October 13 Dr. Kreissl was asked to make a cystoscopic examination to determine the origin of the leak. He found a normal bladder, a perfectly working left ureteral os, but the right ureteral orifice was wide open, motionless. Passing a catheter, No. 7 French scale, into this ureter, it seemed to be checked in its further progress four inches from the orifice, but upon pushing it on, with a very slight effort, the tip seemed to glide over an impediment with a jerk and moved easily upward until the marking outside indicated that it had arrived in the renal pelvis. On its way to the obstruction nothing came through the catheter, but as soon as this was passed and all the way up to the pelvis urinc containing much pus ran out of it as if under pressure. Two hours after the catheter was placed in the ureter the dressings covering the fistula were found dry and remained so thereafter. The leakage through the vaginal vault had also ceased. The catheter was left in situ, and through it the renal pelvis irrigated with antiseptic solutions three times daily. The bladder was also antiseptically treated through a catheter introduced alongside the other instrument. The urine which came through the ureteral catheter was measured daily and examined in the laboratory. It averaged twenty-four ounces; the quantity of pus and albumin, being very high the first day, decreased gradually, while the percentage of urea rose from 0.1 per cent. to 1.5 per cent., and the specific gravity 1006 to 1016 at the end of ten days. The fistula was completely closed October 20. The temperature and pulse during all this time were normal. No pain was complained of along the urinary route. On October 24 the woman dressed and left the hospital for a few hours to attend a dinner party. On October 27 he removed the catheter and found both ureteral openings alternately emitting jets of urine by normal rhythmic contractions. A short time ago Dr. Stillman brought the patient to him for reëxamination. It is now sixteen months since she left the hospital. She is in perfect health. The urinary functions and the urine are normal in every respect.

This case demonstrates the value of the ureteral catheter for therapeutic purposes on suitable occasions, as in this one, where it has returned to perfect function a damaged ureter and saved a kidney which otherwise undoubtedly would have to be removed to cure the urinary fistula. It further shows the fallacy of the statement of Winter, and which is regarded as an axiom by others, that in transverse lesions of the ureter the os will be seen absolutely motionless, while in lateral injuries the orifice, without emitting any urine, will open and close, al-

though not so completely and regularly as under normal conditions. The author has never found the procedure associated with any inconvenience to the patient or followed by any lesion of the parts it comes in contact with, as long as the necessary precautions are observed. These are absolute cleanliness and delicacy in introducing and placing the catheter so as to avoid traumatic lesions, and frequent washing of the renal pelvis, which has to be more frequent the more concentrated the urine is, or else urinary salts will be deposited in and on the catheter, which will act as a chemical irritant outside and plug the lumen without causing urine leakage alongside of the catheter. In this way prompt closure of the defect will be prevented.

The second case was one of primary tuberculosis of the bladder and lower end of the ureter cured by local treatment. The patient, a robust girl, 18 years of age, was seen by the author in consultation with Dr. Abt, of Chicago, June 25, 1904. The patient gave the following history: October, 1903, owing to a severe cold contracted during menstruation, frequent and painful urination set in. Rest in bed and internal medication kept up for several weeks failed to relieve her. Bladder irrigations were added, which made the condition decidedly worse; terminal tenesmus occurred; the urine became more turbid than before and had to be voided every fifteen to thirty minutes. The patient was not noticeably reduced in weight during this time-about eight months-in spite of loss of a good deal of sleep and much suffering from pain. In the cystoscopic examination a number of typical small-sized tubercles were seen in the trigone and a few in the corpus above the interureteric ligament. The right uteral orifice appeared normal; the left one was surrounded by an elevated, cone-shaped, infiltrated and congested area. Close to the orifice a tuberculous ulcer was established. The rest of the bladder cavity seemed healthy. Passing the first three inches of a catheter into the left ureter, he obtained an almost creamy fluid, containing many fragments of inspissated pus. Gradually passing the catheter higher up, the urine became clearer and free from fragments until about six inches from the orifice it was transparent. In view of the previously mentioned conditions in the bladder and in the vesical portion of the ureter he did not venture to pass the catheter higher up. The microscopic examination of the bladder urine and the one obtained separately from the left ureter showed very few blood cells, pus cells, a few streptococci and no tubercle bacilli. This result was corroborated by the Columbus Medical Laboratories, which received a part of the same specimen for examination.

In a second examination of the urine, made June 29, a few tubercle bacilli were found in that portion which was taken from the lowest three inches of the ureter, but none in that from the middle part. On this occasion several well-developed ulcerations were observed in the trigone. The largest ones were far away from the left ureteral orifice. July 5 a guinea-pig was inoculated, which died July 30. The report from the Columbus Laboratories read: "Animal emaciated. At the point of inoculation an area of tuberculosis; bacilli present; glands, liver and spleen tuberculous." In view of the peculiar condition of the urine in the different portions of the ureter, and the fact that no bacilli were found in the middle seetion, the possibility of a primary and ascending infection of the bladder strongly suggested itself, and local treatment commenced July 5. It consisted of instillations of 5 per cent. iodoform-guaiacol suspensions, alternating with bichlorid solutions, in the bladder and in the lower segment of the ureter. Under this treatment the subjective symptoms improved rapidly, and the ulcers healed within a month, while it took the tubercles about two months longer to disappear. Simultaneously with the latter the tubercle bacilli disappeared from the urine, which became quite clear and has remained so since. An inoculation test made in Colorado, where the patient spent a few weeks in the summer of 1905, gave a negative result. The speaker saw her again a few weeks ago and found her enjoying perfect health.

DISCUSSION.

Dr. Frederick A. Leusman:—Primary ascending or urogenous tubercular infection of the bladder is an extraordinarily rare event, if it ever occurs, according to the painstaking and scientifically conducted observations of the leading men in

this line of surgical industry, as Rovsing, Israel, Tuffier, Kümmel, Caspar, Morris and others too numerous to mention. So if Dr. Kreissl is correct in assuming the case reported to-night to be one of primary tubercular cystitis his experience will go down the annals as extraordinary and singular.

Dr. William Cuthbertson:—Dr. Kreissl mentioned leaving the ureteral catheter in situ for a number of days. About four years ago a patient was admitted into my service at St. Luke's Hospital with uretero-vaginal fistula. I found the severed end of the ureter and sutured it in place. This suture broke away and the urine escaped from the wound and made its appearance on the surface of the abdomen, leaving the last condition worse than the first. I then asked Dr. Kreissl to assist me in doing a second operation and to introduce the ureteral catheter from the bladder up into the ureter. This was done, and I then united the severed end of the ureter around the catheter to the bladder wall. This operation was successful and the catheter remained in situ for twelve days. It caused the patient no inconvenience, and the only untoward action was the formation of some urinary salts around the ureteral catheter. The patient made a complete recovery and is still well.

Dr. Kreissl (closing the discussion):—The remarks of Dr. Leusman referring to the opinions of so many authorities that there is no such thing as a primary tuberculosis of the bladder, I want to modify somewhat. It is true that very few cases of true primary infection of the bladder with tuberculosis have been observed. They may have been observed and not recognized; they may have been recognized and not published. There are cases in which we are unable to decide whether the tubercular process started in the bladder or was secondary to tuberculosis elsewhere. If this case had gone on I am confident that there would have been a progressive ascending infection, and that, sooner or later, the kidney would have been involved, and then there would have been a dispute as to whether the bladder became secondarily infected or the kidney. My chief reason for reporting the case is that there was a discussion in this society about two months ago on tuberculosis of the genito-urinary tract, and at that time I made the remark that there is such a thing as a primary tuberculosis of the bladder, and that if we got a case that was not too far advanced, even if there were ulcerations, in my experience it is possible to cure it, and the case I have reported demonstrates it. I have other cases that have been benefited and cured by topical applications, but, of course, I hesitated to publish them; for the same reason I waited a year before reporting this case. I can not see why there should not be primary infection of the bladder with tuberculosis. I do not insist that the infection came through the circulation, or that it came through the urine. In this case, however, like in others, it is possible that the infection was carried to the bladder by careless catheterization. Maybe the patient originally had nothing but a cystitis; perhaps an infected catheter was used and tuberculosis was inoculated in an ordinary case of cystitis. I recall a case in which, by careless cystoscopy and ureter catheterization, tuberculosis of the bladder and ureter was engrafted on an ordinary gonorrheal cystitis. There is true primary tuberculosis of the bladder, leaving alone the question of the source of the infection.

Dr. George E. Brewer, of New York City, read a paper, by invitation, entitled "Some Observations upon Acute Hematogenous Infections of the Kidney."

The discussion was opened by Dr. Arthur R. Elliott, who said:—I have had little personal experience with acute virulent unilateral blood infections of the kidney requiring nephrectomy. The less acute conditions fall more within the daily experience of the physician, and from the standpoint of general clinical interest are perhaps hardly less important. I desire to discuss this aspect of the subject as far as my limited experience enables me to do so. Hematogenous infection of the kidneys in the classic form occurs most frequently as a complication of acute infectious diseases, such as pneumonia, pyemia, ulcerative endocarditis, etc. The "idiopathic" variety of renal infection, which is apparently primary and spontaneous, inasmuch as it bears no appreciable connection with any antecedent condition, is more of a clinical rarity. The source from which the infection origi-

nates and also the microörganism causing it may escape detection. Pus may be absent from the urine or only appear in appreciable amount several days after the acute symptoms arise. A microscopic pyuria may exist throughout and casts be present in the urine sediment. The following case is taken from my notebooks as an apparently typical example of the milder type of cytogenetic infection of the kidney:

The patient was a nervous, active little girl, 8 years old. Her personal history was absolutely without importance except that she was somewhat disposed to attacks of biliousness, during which she would have backache and the urine would become concentrated and irritating to the bladder. There being symptoms of this character present, the urine was examined and found to contain excess of indican, a trace of albumin, but no pus or casts. The little patient was put to bed and the diet carefully regulated, laxatives being administered. A few days after she suddenly had a severe chill, with a quick rise of temperature to 104 F. The tongue was coated and the bowels costive. The urine was found to contain pus. There was no pain until the end of the second day, when shooting pains were experienced in the right side, with the development of considerable tenderness in the right The pyrexia continued for five days. The temperature curve was very erratic. On the fourth day the urine contained 2 per cent, bulk of moist precipitate, estimated by centrifuge, consisting almost solely of pus elements, with a few blood corpuscles. At this time there was much tenderness on palpation in the right lumbar region and exquisite sensitiveness to light pressure over the lumbar muscles posteriorly and at the costol vertebral angle. There was no dullness or bulging in the right flank. The lower pole of the opposite kidney was palpable without tenderness. Liver not enlarged; marked leucocytosis. Decubitus on right side, with leg drawn up. The stools did not contain mucus. Patient was drowsy and looked very ill indeed. Bacteriologic examination of the urine revealed common pus. organisms and saprophytes. On the fifth day of the attack the urine suddenly cleared of pus and the temperature gradually declined until it reached normal in forty-eight hours. For a week, pus, leucocytes, hyaline casts and unusual numbers of cylindrical epithelia were present in the urine sediment. Convalescence was uneventful and to-day the child is in normal health, with a clear urine. I regard this case as an instance of hematogenous infection of the right kidney, with abseess formation and discharge of the pus into the renal pelvis.

An aspect of hematogenous infection of the kidneys which has interested me more than any other is the invasion of the kidneys by infection during the course of chronic Bright's disease. Any microörganisms which gain access to the blood must be removed therefrom by the kidneys. This renders these organs particularly liable to infection, as witness the frequent bacteriuria, albuminuria and pyuria of the acute infectious diseases. In chronic Bright's disease a lowered renal resistance and blocked kidneys must surely favor infection. Although I have no exact data with which to reënforce my belief, I have long been of the opinion that suddenly developing anuria in Bright's disease is often the result of renal infection. The bacillus coli commune I believe to be often responsible for this. I could recite a number of suggestive instances from my experience, but none of them is conclusive. I believe, however, that suddenly occurring anuria with its almost invariably fatal ending during the course of chronic Bright's disease is often due to hematogenous bacterial invasion of the kidneys.

An aspect of hematogenous infections of the kidney of which I wish to speak is the after-effects of slight infections on these organs and particularly their influence in the production of obscure renal hematuria. Acute infection of the kidney, whether it is circumscribed or diffuse in its involvement of the organ, essentially constitutes a trauma in its effects on the gland structure. It is well known that a localized process of interstitial nephritis is usually set up by traumata of the organ. This is true of wounds, calculi, infections, ureteral obstructions, abscesses, infarcts, gummata, ctc. The interstitial degenerative process may be strictly circumscribed to small areas of renal tissue or involve the major portion of the organ, according as the determining trauma has been slight or severe. This local interstitial inflammation must not be mistaken for Bright's disease

proper. Such a mistake has before now been made and has given rise to much confusion and misinterpretation, especially in the matter of the operation and decapsulation of the kidneys for nephritis. Unilateral nephritis, per se, is not productive of the cardiovascular disturbances and toxemias of Bright's disease. It bears about as much direct relation to chronic Bright's disease as unilateral fibrous goiter does to Graves' disease, and that is practically none at all. Unilateral nephritis may, however, give rise to symptoms. Casts and albumin may exist in the urine from that kidney, and nephralgic pains or obscure renal hematuria may mark the future of such a case. It is difficult to explain how hematuria may result from a local and perhaps very circumscribed area of interstitial fibroid change.

Although unable to adequately explain the fact, clinical records show that a small patch of interstitial fibrosis may be the only microscopic change found in a kidney which has bled severely and persistently. The area of involvement may be so small as to escape the most careful search, and it is perhaps partly on this account that even to this day cases of essential renal hematuria with an unexplained pathology are reported. One method of production is advanced by Fenwick to explain two of his operated cases of renal hematuria. He found at operation in each case the apex of one of the papillæ tipped with a villous-looking growth, which proved under the microscope to be a varicose dilatation of the papillary plexus; in other words, a papillary angioma. Removal of this growth with a sharp spoon controlled the hemorrhage in both instances. He ascribes the vascular tumor to compression of the papillary vessels on the proximal side by a patch of localized interstitial nephritis, probably resulting from some preceding obscure infection of the renal substance. It is altogether probable that subacute and strictly localized infections of the kidneys are much more common than we now believe. We might seck analogy in the frequent healed and circumscribed lesions of the lungs revealed at autopsy in unsuspected cases. The depurative office of the kidneys renders them peculiarly liable to bacterial infection. That they do not escape unscathed we may infer from the frequent scars and localized areas of inflammatory change which are oftentimes revealed at autopsy in cases without renal history.

To return for a moment to the question of renal infections as a factor in the

production of hematuria, I offer the following case history as of interest:

The patient is a physician, 43 years of age, without significant family history save the fact that his brother has chronic interstitial Bright's disease. Patient had typhoid fever at the age of 28. Eight years ago he experienced a sudden symptomless hematuria of medium grade, lasting, with diminishing intensity, for three weeks. No exact urinary data are available during the attack. Very shortly after a quantitative analysis showed total amount of urine, 1,000 c.c.; sp. gr., 1020; urea content high; a trace of albumin and a few casts in the sediment. One year after there was a second hematuria of less severity and duration, unaccompanied by pain or other symptom. A third attack of bloody urine occurred after another interval of three years. Although there was no renal colic during this attack, the patient complained of a good deal of aching across the loins and felt very ill and feverish. The urine findings, made several weeks after this attack, were: Total daily excretion, 1,000 c.c.; sp. gr., 1020; urea, 26.50 grams; no albumin, no sugar, moderate indicanuria, no casts. The fourth and last attack of macroscopic hematuria occurred in June, 1904, two years after the last previous recorded. As in former attacks, there were no pain or local symptoms. This attack was apparently precipitated by errors of diet. During the period covered by this succession of hematuric attacks repeated physical examinations were made. The constant findings were as follows: Patient neurotic, excitable, reflexes exaggerated; no polyuria; an occasional, but not invariable, nocturnal urination; habitual constipation; retinal examination negative; B. P., 120 mm. (R. R., 9 cm.); maximum recorded; no cardiac hypertrophy. Arteries not sclerosed; pulse 72, regular. Abdominal examination negative, except for frequent evidences of fecal stagnation. There was no tenderness on deep pressure in the renal regions and the kidneys were not palpable. X-ray examination proved negative. Bacteriologic examination of the urine showed no tubercle bacilli. Mcanwhile no symptoms were complained of by the patient except a good deal of general nervousness, frequent bilious attacks and occasional aching across the loins.

The etiology of this recurrent hematuria constitutes a difficult problem. It was a source of great interest to me during the years of my observation of this case. There is nothing in the patient's heredity or personal history to indicate that he is a "bleeder." The absence of pain, colic, urinary signs and the negative results of x-ray photography render the existence of stone extremely improbable. Urinary tuberculosis is excluded by the progress of the case and the patient's present excellent health. Malignant disease seems out of the question. There is a clean urethral history and the bladder has never been the seat of local signs. Such a hematuria as marks this case may occur in chronic Bright's disease. To negative this interpretation there is the entire absence of cardiovascular developments and the other classic indications of Bright's disease.

My study of this case has developed the following suggestive facts: The patient is found to have an exceptional intolerance for proteid foods and especially for all forms of meats. Eating meats quickly and invariably gives rise to severe toxemia, manifested by elevation of pulse tension, coated tongue, dizziness, loinache, diminution of urine, rise in body temperature, extreme nervousness and depression of spirits, and the appearance in the urine of indican in pathologic amounts, albumin, casts and blood elements. The last recorded attack of macroscopic hematuria was apparently connected with over-indulgence in red meats during a period of unusual professional activity. Unfortunately, the urine was not obtainable during this attack for bacteriologic examination. A number of periods of microscopic hematuria induced by proteid toxemia have been observed during the past eighteen months. Examination of the urine at such times has failed to reveal the bacillus coli commune or other pathogenic bacteria. A dose of calomel and a return to meat-free diet suffice to cause a return of the urine to normal. The urine sediment remains free from blood elements so long as a meat-free diet is adhered to.

In this case we have established a direct connection between hematuria and a toxemia induced by the ingestion of meat, in all likelihood a bacillus coli commune activity. I think I am justified in inferring that the attacks of gross hematuria noted were the result of intense renal hyperemia with hemorrhagic extravasation produced by the action of severely irritating toxins from the bowel. It may even be possible that the kidneys were, during the periods of hematuria, the seat of an actual bacterial infection, but this I am unable to prove. Such an event, as I have before remarked, may be more common than we at present realize. The ability of an acute invasion of the kidneys by the bacillus coli commune or other bacteria to cause hematuria we may, perhaps, be justified in believing. We observe analogous consequences resulting from bacterial infection elsewhere in the economy; for instance, in the lungs. It has recently been demonstrated that atypical infection of the lungs of tuberculous subjects by the pneumococcus is a frequent cause of hemoptysis. Many hitherto mysterious epidemics of hemoptysis observed in the wards of hospitals and sanatoria for consumptives are thus explained. A hematogenous bacterial infection occurring in the kidneys may similarly supply an etiology for some, at least, of the obscure so-called essential hematurias observed from time to time.

Dr. Henry B. Favill:—The very careful and significant discussion by Dr. Brewer must be considered in general as rather disquieting. If in the course of indefinite infective attacks the practitioner is liable to find himself dealing with a phase, even though an accidental phase, of infection which, by reason of its local characteristics and virulence of infection, is liable to be rapidly fatal, and if in connection with that its determining diagnostic characteristics are liable to be very obscure, the opportunity for imperfect diagnosis and consequent failure to apply the radical treatment necessary to save life is perfectly obvious and in the highest degree serious. That such are the facts one can not doubt after seriously weighing Dr. Brewer's statements.

Like all of the very serious problems in medicine, the question demands a careful discussion of the foundations of diagnosis in the individual facts to discover, if

possible, where the line is to be drawn between the cases which are so grave as to demand extirpation of the kidney and the cases, undoubtedly vastly preponderating in number, which tend to spontaneously recover without that capital procedure. From a strictly pathologic standpoint it is probable that a broad classification would be impossible. Although it is difficult to demonstrate from an etiologic point of view, there is doubtless a great difference between lesions which are inflicted upon the kidney by reason of materials brought in the blood current of a chemically toxic nature and lesions produced in the kidney by organized septic particles brought in the blood current of an essentially embolic nature.

So far as I can now see, the danger of this acute destructive sepsis of the kidney outlined by Dr. Brewer lies in the territory of the embolic septic accidents or the so-called septic infarcts. That, however, is a pathologic view, and with difficulty transformed into a clinical view. To illustrate the difference let me cite briefly the

following considerations:

It is a very common experience to meet with cases of acute sickness in individuals previously sound, at ages ranging from infancy to old age, in which the attack appears to be an acute gastrointestinal toxic performance of some kind. Such an individual is taken with vomiting, perhaps diarrhea, intense abdominal pain and with temperature ranging from normal to 104. Examination of the urine during the attack and afterward will show that the previously normal urine has been transformed into concentrated, extremely acid urine, oftentimes containing much diacetic acid, extreme indican, albumin in variable quantities, sometimes very large blood cells in abundance and myriads of granular casts, sometimes considerable pus, sometimes not. The condition in its acute stage is a very severe one, though as a rule transient. Such urinary showings are liable to disappear inside of a week, and as a rule inside of two weeks. I could cite many histories if it were opportune.

The indications pointing to kidney involvement are usually lacking, although occasionally there will be pain in the region of the kidneys. The pain is liable to be severe in the abdomen, and this even in cases which have shown no marked intestinal symptoms. More than once the question of appendicitis has arisen in

striving for a diagnosis.

These cases are doubtless due to intense toxic manufacture in the gastrointestinal tract, and the kidney participation, so far as one can conjecture an acute toxic attack, hematogenous, and probably so far as the kidney is concerned nonseptic. These renal manifestations are undoubtedly akin to the milder renal manifestations which we find in all sorts of less acute toxic sickness and simply in their aggravated showings bear witness to the intensity of this acute happening.

Where they shade into experiences of the following kind is an interesting and important question, and it is at this point that difficulties of diagnosis are most liable to arise, because the foregoing cases, although very disquieting at the moment, would not be likely to raise the question of surgical interference. years ago a patient, a woman 35 years of age, with whose previous physical condition I was thoroughly familiar, was attacked with acute tonsillitis of staphylococcus origin; not scriously ill. After three or four days there suddenly developed what seemed to be a sharp reinfection, and somewhat later intense pain in the left side, and still later tenderness in the costo-vertebral angle, but more distinetly tender in the anterior abdominal aspect upon bimanual palpation. Soon the kidney became distinctly palpable and very appreciably enlarged, the temperature ranging from 102 to 103.5. The urine, previously normal, showed albumin, casts, blood and a very considerable amount of pus. The condition for a short time seemed very acute and the patient, of course, a source of considerable anxiety. In the course of three days the acuteness subsided and recovery followed promptly, and inside of two weeks the renal signs were practically abolished and gradually the urine became entirely normal and has remained so to this day. There seems to be hardly any doubt that this case was one similar to the cases recited by Dr. Brewer. What the factor may have been which kept it within the territory of spontaneous recovery one can only conjecture.

The important question is, What is going to be our point of view during the course of the attack before the severity of the septic process can have been fully determined in the light of our accumulating knowledge as to the tendency in a certain proportion of cases to fatal issue? It seems to me that there is liable to be a very grave and difficult question in judging of these matters. If the assumption is sound that this case I cite was a true kidney infection, it must be concluded that it could easily enough have passed into the category of cases demanding operation. On the other hand, the fact that it did not and underwent entire recovery must, beyond any question and just as seriously, demand a conservative view which would act as a stay to operative procedure. To answer this question by simply saying it is a matter for judgment in the individual case is to utter a simple truism, but not at all to facilitate the diagnostic or prognostic factors in the matter. The same statement is made and was formerly made with far greater emphasis with reference to the subject of appendicitis. To-day we have virtually cut the Gordian knot and have gone almost to the extreme in the direction of operating, diminishing the category of cases which are proper subjects of deliberative judgment to the very minimum. Such a solution of this kidney problem can never happen. The removal of a kidney in any stage of disease stands in its relations to the individual life as one of the most capital of operations, and the time can never come when we can say, "When in doubt, operate," as we now say with regard to the appendix. Doubtless the type of infecting agent is a strongly determining factor, but we have only crude and symptomatic indices upon that factor as yet. The unusual case is the enlightening case, as a rule, and I would cite the following curious experience: A man 26 had been under my care for two years, with what I supposed to be chronic parenchymatous nephritis. His urine showed large amounts of albumin, moderate quantities of casts, not a profuse quantity and abundant solids. Being taken with an acute illness of some infective nature, in the hands of a colleague, I was called to see him in consultation. He had developed in the right side a severe pain, with all the signs of acute sickness; great tenderness on antero-posterior palpation, with a distinct tumor of the right kidney, which seemed to promise abscess. The urine only contained a moderate amount of pus. Believing, as I did at that time, that we were dealing with a case of "large white kidneys," it seemed to me that there had been a septic development in one which was liable to destroy it. However, for various reasons no surgical interference was seriously considered, and the man gradually recovered from the acute condition and gradually resumed his habitual condition of chronic nephritis. Within two years, during the wave of adventure in the Edebohl's capsule splitting procedure, he was subjected to operation on both kidneys. He was found to have both kidneys extraordinarily hard and contracted, though yielding constantly, up to this point, all of the urine manifestations of the other type. His case is interesting for two reasons: In the first place, it shows clearly enough that a severe septic accident may occur even to a badly damaged kidney and spontaneously recover. It shows, moreover, what, to be sure, has been shown innumerable times, that our judgment as to the anatomic condition of kidneys, based on urinary findings, is extremely unreliable.

Although I have other experiences bearing upon this subject, I do not care to take the time to detail them. These serve as a text merely for the following reflections: First, if this kidney condition in question is pathologically the result of septic infarct, it is only reasonable to suppose that it may be unilateral. Where the condition seriously demands a decision as to operative procedure, segregation of the urine of the two kidneys by some method is imperative. The great obstacle to operation upon one kidney is the condition and possibilities of the other. Segregation can determine this question with reasonable certainty. A palpable tumor would, of course, strongly suggest a unilateral lesion, with a fair assumption as to the health of the other, but my second case cited shows that that need not be the case and that it is entirely possible for this condition to occur in the course of pronounced bilateral nephritis. Second, with the groundwork of diagnosis established, the unilateral character determined, the septic process pro-

nounced, there is still a large margin of doubt as to when the point has been reached where removal of the kidney is necessary. Upon this question I have nothing to suggest in addition to what is suggested by Dr. Brewer. It is so obviously a case for combined medical and surgical judgment that I shall simply say that surgical consultation should be invoked as soon as there is any reasonable suspicion of this condition, and so far as our present light goes the question must be weighed upon its current aspect. Third, and this is the most important word that I have to say, in the vast majority of instances this condition will occur under the observation originally of the general practitioner. The fate of these grave cases will rest upon the alertness of the man in charge. Considering the fact that these gravest of conditions may exist with scarcely any diagnostic signs, it is inevitable that sometimes they shall be overlooked. It is very rare, however, that there would not be some condition sufficient to raise a suspicion of what is in progress. It is of the deepest importance that a man in general practice, and hence in relation to these things in their early stages, should come to a realization of the condition and its gravity and bring to bear upon them with all possible completeness the best surgical coöperation.

Dr. L. McArthur: —The society is to be congratulated on hearing this epochmaking and pioneer paper. Current literature is practically a blank so far as any systematic recognition of the treatment of this particular type of cases is concerned. It is true that throughout the literature one will find here and there cases singly reported of the type that Dr. Brewer has presented. In the deadhouse there have been shown us regularly and systematically by pathologists the kidney lesions which they have demonstrated and removed in vivo, which, alas! are too frequently found in the deadhouse and not in the operating room. The cases presented by Dr. Brewer should not be confounded with the type of suppurative kidney which so frequently results from extension upward from infective processes below in the same urinary tract, but are to be considered as infections coming through the vessels to the kidney. It has been a difficult matter to conceive how the lesion could be so absolutely unilateral in a given case, as has been the experience of Dr. Brewer. That it does occur is true. It remains yet to be explained how it occurs. It is hard to conceive of so many particles of infective material floating into a single renal artery, lodging in so many of its branches and confining itself there. Perhaps some trauma unknown to the patient may have been the cause. It seems unreasonable that it should have been months or years before the condition occurs. Personally I have had experience with two cases of this type, and my experience, because of the gravity of the condition, has driven me to operative interference. The symptoms were as described by Dr. Brewer: pain, enormously high temperature, 105-6, coming on suddenly. One case occurred in a young woman of 25 or 28, who had been married in the East; she had taken a journey of three days on the train. On arriving in Chicago she had a chill, abdominal pain, pain over the lumbar region at the costo-vertebral junction, with a bacteriuria of the most pronounced type, so that when the urine was held up in the sunshine it presented a fluoroscopic character on account of the innumerable bacteria present. There were very few pus corpuscles. The bacteria, on staining and culture, proved to be colon bacilli. After watching her for two days with this extremely high temperature, the mental condition growing worse, I was induced, after consultation with my confrères, to incise this kidney. The kidney capsule was found edematous; the kidney swollen, with mottled reddened area in various portions beneath the capsule, and, upon incision of the posterior aspect of the kidney, there was a free escape of fluid, but no pus. The cavity of the pelvis had been opened; turbid urine escaped, but no pus. The kidney was drained. The temperature promptly declined to normal, or nearly so, and the patient made an uninterrupted recovery. This appeared to be a case of acute hematogenous infection of the kidney with the colon bacillus from a lack of care of a young bride traveling on a train for two or three days without emptying the colon. During that time she had no bowel movement.

The second case was that of a young child, five years of age, which had been through an exauthem, whether scarlet fever or not, I am not sure, nor was the

attending man. But, on the tenth or twelfth day of the siekness there were symptoms of pain in the side, and tenderness over the left kidney. Pus appeared in the urine, and bacteria. The temperature was rising and the patient becoming stupid, the kidney was incised and drained, and found to contain pus in the cortex in one or two areas. In neither of these eases did it seem necessary to excise the kidney.

Anatomically, the vessels of the kidney are terminal. When an embolus occurs in one of these it forms a cone of pyramidal shape upon the capsule. It has seemed to me, on theoretical grounds, that the removal of the capsule of the kidney would effect a eure. On theoretical grounds, it has seemed to me that if there were any time when decapsulation of the kidney was indicated, it would be when such a kidney is present as that of which a photograph has been passed around by the essayist. There, we see beneath the capsule multiple pustules, as it were, every one of which could have been opened up by simple decortication, then, with packing of ganze similar to the fixation method of Senn for a kidney, we might possibly preserve the kidney, yet at the same time having drained the abscesses and possibly having effected a cure. I would ask Dr. Brewer how it appeals to him, also why the lesions are multiple in a single kidney? I remember reading some ten years ago a paper by Lilicnthal of New York in which cases were reported of abscesses of the kidney having been opened and drained without the removal of the kidney, in which he did at that time a nephrotomy, opening the abscesses, with conservation of the kidney, and cure of patient.

In this connection a condition not unlikely to be mistaken for a surgical kidney of this type is a form of kidney lesion which those who have had considerable to do with the septic processes associated with the appendix will meet with, and in which it will be necessary to make a differential diagnosis. I refer to hemorrhagic nephritis of a septic process in the appendix. I recall at least half a dozen such cases within my own personal experience. We have had occur symptoms where it was difficult to differentiate between appendiceal colic and a renal colie, eonsidering the character of the pain and the character of the blood count. The high temperature would lead one to think of a septic process, and to think that the appendix was the source of the trouble. In the absence of tumor, however, and in the presence of blood, pus, and micro-organisms in the urine, it might easily be that we have to deal with a kidney lesion and be led to operate, when, in reality, it was due to a gangrenous appendix. It has several times oecurred that the mere removal of a gangrenous appendix has made such a type of hemorrhagic nephritis subside. On looking over the literature in regard to this type, I find that Dieulafoy, Hildebrandt and Lorain each had experience of the same kind. In two cases of four that Dieulafoy operated on, death ensued. On examining the kidney he found both coagulation necrosis and a cloudy degeneration of the epithelium, as associated with the septic process in the appendix. If we have blood and pus in the urine, high temperature, absence of tumor in the neighborhood of the appendix, it might very easily be mistaken for this type of kidney trouble, the kidney might be removed and the appendix overlooked. Such a consideration will have to be taken into account in the differential diagnosis. Hildebrandt noted, in three eases, that the mere removal of the appendix eaused the hemorrhagic nephritis to disappear. He did not agree with Dieulafoy that it was necessary to make any operation upon the kidney; nor has it been, in my experience, in those cases in which the appendix was at fault. All praise, I think, is due to Dr. Brewer for urging early surgical interference. The idea of palpating an abscess of this type and of finding such a quotation from the literature of the present day seems to me so absurd as to really excite ridicule.

Dr. M. L. Harris:—I am very glad to have heard the paper of Dr. Brewer, and congratulate not only myself, but all of the members present, who have had the opportunity of enjoying this treat. I think it is one of the most valuable papers we have had the pleasure of hearing in many a day. The experimental work Dr. Brewer has done tends to show the influence of trauma in determining the localization of the microbes. This is a very interesting point, and the question which it immediately brought to my mind was this: In the first place, out

of thirteen cases, eleven of them were in women, and, in eleven of them, it was the right kidney involved. Knowing, as we do, the remarkable frequency with which we find moveable kidneys in women—more than 50 per cent. of women have distinctly movable kidneys—and the further fact that the movable kidney is almost always the right one, and that these movable kidneys are subject to almost constant eongestion, as a result of their displacement, the question which presents itself to me is: What influence has this mobility of the kidney in determining the localization of infection in the right kidney? Is the movable kidney trauma sufficient to determine localization of the infection? Certainly, these eleven out of thirteen eases in women, and eleven of them on the right side, and the extreme frequency of movable kidneys on the right side, would lend some support to this view, and I would like to know what Dr. Brewer thinks of that point.

The necessity of operating on this class of cases I think no one would deny. The point raised by Dr. Favill, however, was a very important one, that is, when is the case serious enough to demand operation, and when will the case recover without operation? We have all of us seen many cases of infections of the kidney recover without operation. That is the one point which is going to call for our best diagnostic efforts. When, however, we have actermined the fact that it is a local infection, that it is limited to one kidney, and of the severity and type described by Dr. Brewer, there can be no question as to the absolute necessity of

immediate operation.

Dr. Brewer (closing the discussion):—I agree with practically everything that has been said. In the first place, there are a great many varieties of infection by the presence of baeteria in the blood. There can be no question but that certain pathogenic organisms in the blood can be exerted by the kidneys without any anatomical or pathological lesion. In other eases, where the virulence of the organism is more intense, or the kidney resistance diminished, we may have a glomerular nephritis, and the changes which go on owe their presence to an acute toxic condition. We also have mild eases of septic infarcts, in which the organisms are not virulent, and the patient may entirely recover under ordinary eonditions. Again, we have cases that are slightly more virulent, where an abseess will break into the pelvis of the kidney, giving rise to the so-called idiopathie pyelitis. We also have metastic abseesses which break into the kidney pelvis. Israel has shown that there are metastatic abseesses in the walls of the pelvis of the kidney, and, on pathological examination, there would be some doubt as to whether we have to deal with a hematogenous or ascending infection, because of the presence of lesions in the pelvis of the kidney. Again, we may have triangular infarets break through the capsule and give rise to a perirenal suppuration; and finally we may have, in addition, ureteral obstruction from some eause, giving rise to a pyonephrosis. The difficulties of diagnosis are grave. That would be inferred from the number of eases in which we have made mistakes. In the eases I have reported you may think it strange, after three fatal eases from simply opening the kidney and draining it, that I should have operated on a fourth ease in the same manner. The first cases were all fatal. Although several years elapsed between the first and fourth ease, I had no appreciation of the actual condition. I had supposed that these infections were bilateral; therefore I hesitated to sacrifiee one kidney when I thought the other was markedly involved, and it was only after two autopsies in which the lesions found were unilateral at first, and afterwards bilateral, secondary from the primary lesion, that I appreciated that they were often unilateral. Another autopsy showed the same thing, which I did not refer to in my paper.

Dr. MeArthur referred to Lilienthal's paper. I remember very well when he reported this case. It was a bilateral ease. He did not sacrifiee one kidney because he believed the condition was bilateral. After the acute symptoms developed in the kidney he laid it open and drained it, obtaining a good result. I was influenced by his case. After four eases treated by nephrotomy proved fatal, we began to do nephrectomies. Every one of these eases has been successful except one, which was due to the absence of a kidney on the other side, and

this patient, a child, was so ill that it did not seem wise to waste time in either catheterizing the ureters or in using the cystoscope.

The differential diagnosis is often difficult. Within the last three weeks, while I was writing this paper and going over the literature of the subject, I failed in the diagnosis of one of my cases. The patient was a young girl, who was brought to the hospital with a temperature of 105°, with acute pain in the abdomen and over the gall-bladder. I was misled. I made a diagnosis of gallbladder infection, of subphrenie abseess, or infection of the liver. I ought not to have made that mistake. In eholeeystitis, in abseess of the liver, or in subphrenic abseess, we do not have a sudden rise of temperature to 104°. It is always gradual. In this instance I made an anterior incision and found out my mistake. A good many of these eases are taken for acute appendicitis. This acute onset of symptoms suggests to me more a pneumonia or grip than any of the intraabdominal suppurative lesions. We ean diagnosticate it more easily in the early stages from appendicitis, from acute cholceystitis, from subphrenic absecss, or abscess of the liver, than from the acute infectious types of disease like pneumonia and grip. It is rare, in appendicitis, that we have a temperature of 104-5°. The same is true in regard to other intra-abdominal conditions. I have seen eases of mild type upon which we have not operated. I recall one case I saw in consultation with Dr. Janeway of New York, of a young man, with symptoms of grip, who had a sudden rise of temperature to 103°, with pains in the back, loins, and extremities. He presented the picture of an acute grip. On eareful examination it was found that he had tenderness in the left eosto-vertebral angle. This was the only sign. The abdomen and lungs were negative. On examining the urine, we found he had slight pyuria; the urine was full of bacteria, later found to be colon bacilli. We made a diagnosis, then, of probable multiple septic infarets of the left kidney, due to colon bacillus, but did not advise operation, as it was not an extremely virulent ease. Within three or four days the condition ameliorated; he began to get better; the temperature was lower; tenderness began to diminish, and also the amount of pus and albumin in the urine began to diminish. This was followed by excessive fever, shooting up of the temperature, increase in the amount of albumin in the urine, seantiness of urine, and tenderness over the right kidney. We had exactly the same course with the right as with the left kidney. We did not operate. We had examination of the blood made and found colon bacillus. The patient recovered completely, after several weeks. Some of these milder eases will recover under expectant treatment, or possibly under some milder form of treatment than that which I have outlined. In a ease to which I called attention, the temperature was between I01° and 102°; there was a rather tardy increase in the symptoms. We did a multiple nephrotomy, and, in that ease, I made up my mind that I could, if necessary, go in later and remove the kidney; and although convalescence was slow, the patient made a complete recovery.

Pathologically, in some of these cases we get a baeterial embolus of one of the arteries. If in the terminal arteries, we get a distinct triangular infarct. In the other eases, we have a smaller mass of baeteria, which is not arrested in the arteries, but the eapillaries. In the former type we have large triangular infarets which cause destruction of the kidney; in the others we have small, minute dots studding the kidney, and in many of these eases the true nature of the lesions is not appreciated, until we have made microscopic examinations. The microseope will show a large number of these infarets in the eapillary vessels. In the matter of treatment one will have to be guided by the fact of the virulence of the onset, coupled with the further fact that, immediately after this virulent onset, we have a continuation and increase in symptoms. If a patient has a temperature of 104-5°, and that temperature on the second day continues to go up and the pulse-rate to increase, and the condition is progressive, the indications are for nephrectomy. If, on the other hand, the temperature starts at a lower point, and the progress of the ease is slow, or the temperature is stationary for two or three days, we can afford to delay operation. In all those eases in which we did nephrectomy, we had to do with very, very siek patients. I never saw a patient as ill as the little child of three who recovered from operation. It was so ill that when it was held over the shoulder its head would hang down like that of a dead child. Apparently there was absolutely no sign of vitality. The child was in a desperate condition. Were it not for a speedy operation the child would have died on the table. It was a long-neglected case. It was operated upon four-teen days after it was first observed.

A joint meeting of the Chicago Medical and Chicago Pathological Societies was held March 21, 1906. The president of the Chicago Medical Society, Dr. C. S. Bacon, was in the chair. Dr. Fenton B. Turck read a paper entitled "Experiments in Producing Artificial Ulcers and Gennine Induced Peptic Ulcer."

PRELIMINARY REPORT ON ULCER OF THE STOMACH: PATHOGENESIS AND PATHOLOGY.

EXPERIMENTS IN PRODUCING ARTHFICIAL GASTRIC ULCER AND GENUINE INDUCED PEPTIC ULCER,

FENTON B. TURCK, M.D., CHICAGO.

(Abstract.)

[From the Research Laboratory of the Turck Institute.]

Before taking up the subject of his own experiments the author reviews the methods adopted by previous investigators in producing peptic ulcer. All of their methods are classified under six main heads, e. g.: 1, Mechanical and physical injury; 2, chemical injury; 3, general dysemia; 4, disturbances of local circulation; 5, injuries to nerves and nerve centers; 6, local infection. Ulcers were produced in many cases. But these artificial methods were either no other than would cause ulcer formation in any part of the body, or they were foreign to conditions present in ulcer of the stomach in man.

With some modifications the author carried on similar experiments in producing artificial ulcers, following out, at first, the methods of mechanical and chemical irritation, later taking up injections of toxins, then the question of metabolic disturbances, and, finally, the problem of the genuine induced peptic ulcer. Mechanical and chemical irritation failed to produce ulcers, even with such radical means as the feeding of mustard oil for fourteen months. The possibility of systemic disturbances, altered metabolism, impaired nutrition being etiologic factors in the production of ulcer led to the experiment of confining animals in very close quarters for a long period of time. Of the 96 guinea-pigs and 36 rabbits used in this experiment, all the rabbits died, while 6 guinea-pigs survived nine months of confinement. Two genuine peptic ulcers were found in the six surviving guinea-pigs.

These induced ulcers, produced for the first time in the author's long series of experiments, suggested the possibility that systemic conditions were important factors, that alterations in the toxic state of the alimentary canal, with consequent changes in the blood, might play some rôle in the formation of the ulcer. To modify, then, the bacterial status of the alimentary tract, experiments were begun in introducing cultures of bacillus coli communis into the circulation and into the stomach. The toxin of bacillus coli being intracellular, suggested the experiments of using killed as well as living cultures.

Intravenous inoculations of dogs and rabbits with cultures of bacillus coli for a long period of time (one mouth to six months) failed to produce ulcer of the stomach. But it was found that artificial ulcers made by removing portions of the nuceous membrane of the stomach did not heal in four cases out of the twenty animals receiving the above inoculations. Genuine induced peptic ulcers were produced, however, in every experiment in which cultures of bacillus coli were fed to dogs. Bouillon cultures of this organism were fed daily in increasing amounts, from 50 c.c. to 2,000 c.c., for two to four months, in connection with an ordinary meat diet, and in one case with meat extractives. During the course of the experiments, observations were made of the blood changes, such as the

agglutinating, hemolytic and coagulating power, the bacteria in the blood and stomach, the systemic disturbances, the evidences of infection, the symptoms of nleer, as pain, hemorrhage, etc. It was found that the dog's serum agglutinated bacillus coli in high dilution, that the coagulating time of the blood was slower, that hemolysis was present, that bacteria were at no time found in the blood, that few, if any, symptoms of systemic disturbance appeared. In one case, where death resulted from hemorrhage from a pyloric ulcer, symptoms of internal hemorrhage developed a few days before death.

Postmorton examination revealed ulcers in either the stomach or duodenum, the number varying, however, from a few in the duodenum to numerous typical peptic ulcers in the stomach. Histological examinations were made of the ulcers in various stages of their development, and of the liver and kidney. The chief points of interest noted in this study were: 1, Catarrhal condition of the mucosa; 2, local necrosis of the cells; 3, breakdown of the glandular structures; 4, disappearance of the chief cells; 5, marked hyperplasia of the parietal eells, which were large and prominent; 6, vacuolization of the parietal and chief cells; 7, complete degeneration of the cells; 8, no inflammatory reaction, such as round cell infiltration, either surrounding or at the site of the ulcer.

The factors concerned in the production and persistence of ulcer of the stomach and duodenum appear from the author's experiments to indicate a dual condition. There seems to be some toxic condition produced, which overcomes natural resistance, resulting in cytolysis, and possibly some chemical substances formed within the alimentary tract, which, when absorbed, may neutralize the protective bodies in the blood and tissues resulting in autocytolysis.

CONCLUSIONS.

- 1. Ulcer of the stomach and duodenum can be produced in dogs by feeding bacillus coli communis for a variable length of time.
- 2. We have now for the first time a firm basis for the unraveling of the finer or underlying etiology of uleer.

DISCUSSION.

Dr. Ludvig Hektoen:—I suppose that the question which is uppermost in the minds of those who heard Dr. Turck's paper is the relation between induced ulcer in animals and spontaneous peptic ulcer in the human being. There are many points of resemblance. The form of the two kinds of ulcers corresponds fairly well, but with reference to location the similarity is less striking, perhaps on account of the multiplicity of the induced ulcers. Both varieties may heal by the formation of connective tissues; both may lead to severe hemorrhage and to perforation of the stomach with secondary peritonitis.

As regards the histology of the ulcers we note that the experimental ulcers correspond closely to the spontaneous in so far as there is not present any marked typical inflammatory changes; at least not in the earlier stages of the formation of the ulcers. The interesting and striking proliferation of the acid cells in the vicinity of the experimental ulcers does not find any analogue in the spontaneous ulcers so far as I know; but the histology of the human ulcer, in its various stages, has not been worked out as fully as it might be. It is rather infrequent that one obtains ulcers, particularly in the early stages. Most of the ulcers examined present only the later stages. This condition of the acid cells in human ulcers The causation of the human ulcer is usually stated merits special attention. dogmatically somewhat as follows: It is the result of autodigestion, due to disturbance in the nutrition of the eells on account of various conditions, such as hemorrhage, stasis, anemia and local infection. In Dr. Turck's experimental ulcers in the dogs all these conditions appeared to be absent; there is no hemorrhage, no stasis, no anemia, no infection in the ordinary sense in which we use the word, namely, to indicate lodgment and growth of pathogenie microbes. It is consequently necessary to assume that in these experimental ulcers the products of the colon bacillus, either directly or indirectly, lead to local disintegrative changes that eventually produce ulcer. Just how these changes are produced, whether by suspension of the anti-autodigestive mechanism or otherwise, remmains to be seen. The specimens shown are certainly most interesting, and I would congratulate Dr. Turck upon having devised a method which promises much for the study of the experimental pathology of the stomach.

Dr. Wm. T. Belfield:—It would seem that the research which has been briefly sketched here this evening should have been made in Germany, because we are accustomed to have such things emanate from European laboratories, where men are paid to devote their lives to such work and are provided with every facility therefor. I have had the privilege of seeing Dr. Turck's work at different times, and I have been deeply impressed with his zeal, enthusiasm and critical analysis of his own work. So far as I know, he has furnished for the first time the proof that ulcers of mucous membrane can be produced by blood intoxication, and, incidentally, the further proof that one such toxin is that of the bacillus coli communis. The practical value of that, as he himself has said, remains to be determined. We have known, in a general way, that ulcers of different mucous membranes, especially of the stomach, duodenum and bladder have been produced by various poisonous agencies, such as those of septic blood infection, the toxemias of chronic nephritis and of certain metallic poisons, like the various mercurials, as well as by extensive burns; but we have had no definite knowledge as to the agents whereby uleers are produced.

The subject interests me, especially because of the occurrence of stomach-like ulcers in the bladder, in faet, in the entire urinary tract. It is one of the conquests of the cystoscope that we have learned to recognize, as not infrequently occurring in the bladder, a simple round uleer similar in appearance to the round peptie ulcer of the stomach. These ulcers are never detected, perhaps never suspected, except through the cystoscope, because they are not accompanied by the presence in the urine of those characteristic changes which we look on as the inseparable accompaniments of an inflammatory process, viz., pus, blood and bacteria. In a few cases these uleers have perforated into the peritoneum, with a consequent fatal peritonitis; and the histological findings were similar to those of the stomach ulcer, no evidence of a local inflammatory process, no evidence of bacterial invasion. It is interesting, clinically, that round ulcers have been found in the stomach and bladder of the same individual, a strong suggestion of their common origin. The round uleer of the bladder usually heals spontaneously, as, no doubt, the stomach ulcer commonly does. But whether the scar of the bladder ulcer may be the seat of a malignant process, as is the case with the stomach uleer, has not yet been determined.

Adjourned.

A joint meeting of the Chicago Orthopedie and Chicago Medical Societies was held March 28, 1906, with the president of the Chicago Orthopedie Society, Dr. Wallace Blanchard, in the chair. The program consisted of a symposium on Tuberculosis of the Hip. Papers were read as follows: 1. "Etiology and Pathology," by Dr. E. W. Ryerson. 2. "Diagnosis and Differential Diagnosis," by Dr. John L. Porter. 3. "Atrophy and Adduction Deformities," by Dr. Wallace Blanchard. 4. "Mechanical and General Treatment," by Dr. John Ridlon. 5. "Surgical Treatment," by Dr. A. B. Hosmer. The symposium was discussed by Drs. M. L. Harris, Edward H. Oschner, Frederick Muchler, Norman Kerr, E. W. Ryerson, Wallace Blanchard, John Ridlon, William Fuller, M. L. Harris, John L. Porter, and A. B. Hosmer, after which the meeting adjourned.

DISCUSSION.

Dr. M. L. Harris:—There are a few matters connected with this very excellent symposium which seem not to have been touched upon, or touched upon very lightly. They are very important ones, because they will change somewhat the picture of this disease, which has been portrayed to-night. The only remarks touching upon this subject which I remember to have heard were the one made by Dr. Ryerson that the mortality was 52 per cent., and the one made by the president, Dr. Blanchard, that the patients whose pictures he presented had been under treatment four years. If we make a little more prominent these two

points, namely, that the mortality is extremely high, and that the time of treatment is extremely long, we have indeed a very gloomy picture. Watson-Cheyne says that the average treatment in 386 cases was three years. Of those that recovered, over 15 per cent. died of tuberculosis of the lungs and of the meninges. Others give practically the same statistics. During the most favorable period of life, that is, the first ten years, Koenig, out of 720 cases, had 65 per cent. recoveries and 35 per cent. mortality.

There are a variety of forms in which tubereulosis affects bone—the tubereular focus, the tubercular sequestrum, the tubercular infarct, tuberculosis sicca of Volkmann, and diffuse tuberculosis. While it will be admitted that it is possible for all of these forms to undergo spontaneous eure, the probabilities of a spontaneous cure vary a great deal in the different forms; not only the probabilities of a spontaneous cure, but the length of time necessary to complete a cure varies greatly. The area infected by tuberculosis is primarily in all of these cases a pure tubercular infection. It is unmixed infection; there are no organisms present except the tuberele bacillus. That being the ease, it must be acknowledged, theoretically, at least, that if we can remove completely the tubercular focus, the patient will recover in the space of time ordinarily required for a simple fracture or any injury to the bone. And such is the case. While the tubercular focus inay undergo spontaneous cure without any permanent damage to the joint, a tubercular infarct, which almost always affects the epiphysis, and therefore involves the joint, recovers usually with fixation. Ankylosis takes place because the cartilage over the tubercular infarct is always lost. The primary focus of tubereulosis being infected by no other organism than the tuberele bacillus, there should be no more dauger in opening a joint to remove this tubercular focus than any other joint for any other purpose. We can open the knee joint for a fracture of the patella, wire the fragments, and we have no bad results. Infection very seldom takes place. We can open any of the joints and get primary union, so that we can open a joint, if necessary, in which the bone is affected by a tubercular focus, remove that tubercular focus, and get primary union. The immediate danger of this operation is practically nil. The danger of disseminating tuberculosis, if all the focus can be removed, is extremely slight. The results are very

I have operated on several cases of hip joint disease in the early stages by removing the tubercular focus completely, and in so doing I have opened the joint a number of times. I have removed a considerable portion of the neck and head, sometimes the complete head, or the epiphysis, and I have not yet had a single case of ankylosis following this operation. I will admit, it is difficult to make a diagnosis, first, as to the number of foci, because they may be multiple; second, as to the location of these foei, and third, as to the particular form with which the bone is affected. But I will give to the x-ray more credit than Dr. Hosmer does, because I believe that by the use of the x-ray we are often able to locate the foeus; also to determine the number of foei, but not necessarily the variety or form of tuberculosis. In a favorable case, whether we have a single focus or multiple foci, if we can locate them, I believe it is good surgery to operate, to remove completely the tubercular focus, and close up the joint. These patients, then, instead of going through a prolonged course of treatment extending over months and possibly years at the best, will have a cure completed in so many weeks. Such a cure, I believe to be more permanent. Every ease of spontaneous cure of a tubercular focus in bone is not a complete cure in the sense that the tubercular focus has been gotten rid of. The tubercular focus has been rendered latent, and that is all. It is liable to accessions at any time, and I have seen a so-ealled cure of a tubercular hip joint become active after thirty years of latency. These spontaneous cures are never complete cures. They may be excited into activity at any time. If we remove completely the tubercular focus and the patient recovers, he is completely cured. Therefore, the point which I would make in connection with the subject of tuberculosis of the hip is that a large number of these eases, not all, because many of them are not suitable for operation, can have their period of invalidism very materially reduced, can secure just as good, or possibly better results, by an early operation, which will remove, completely, the tubercular focus, and that this operation will not be attended by any material risk to the life of the patient. When this shortened period of invalidism, and the completeness of the cure, are placed opposite the years of treatment, the weeks and perhaps months of confinement to bcd, and months and years handicapped by extension and fixation apparatus, I think the results more than counterbalance any possible risk connected with the operation.

Dr. Edward H. Ochsner:-In connection with the differential diagnosis of tubercular hip disease, I would like to call attention to a condition which the essayists did not touch upon, but one which I have found quite a number of times. The condition was forcibly impressed upon my mind recently because a man with large diagnostic experience made a mistake in reference to this one point. I refer to the differential diagnosis between hip disease and lumbar abscess, the latter the result of a perforated appendix, a pyonephrosis or a tuberculosis of the spine. It is not uncommon to see a case suffering from tuberculosis of the hip diagnosed as lumbar abscess or vice versa. Only recently I saw a case of a lumbar abscess due to a perforated appendix, which was diagnosed as tuberculosis of the hip. It had practically all of the symptoms of a tubercular hip, except one, namely, there was no resistance to passive adduction and abduction of the thigh. In these cases of lumbar abscess there is often flexion fixation with resistance to passive extension and passive circumduction, but there is never, so far as my experience goes, any considerable resistance to passive adduction and abduction. If one will grasp the knee one can abduct or adduct it without the slightest resistance, while in a case of tuberculosis of the hip there is usually nearly as much resistance to passive adduction and abduction as there is to passive flexion or extension, providing the involvement of the hip is at all marked,

and only in this class of cases is this serious mistake likely to occur.

I was very much interested in and instructed by the forcible way in which Dr. Blanchard brought out the difference between atrophy and shrinkage, and I think it is a point to which we have formerly not paid enough attention. When a patient with tuberculosis of the hip comes under my care there is always one thing that is uppermost in my mind, and there is one condition that I strive to secure, namely, good nutrition of the patient. If I can secure good general nutrition of the patient, the tubercular process is sure to be arrested and result in ultimate healing of the hip. There is no one thing which interferes with good general nutrition so much as constant pain. If untreated or poorly treated these patients are in pain night and day, day after day, and week after week, and there is nothing that so saps the patient's vitality as this constant nagging pain. If one can relieve this pain without narcotics, and put the part at rest, and make the patient comfortable, the nutrition becomes greatly improved, and just as soon as the nutrition gets better the tubercular process begins to heal. There is nothing that relieves this tubercular hip pain so quickly and so generally as absolute fixation, providing that the antagonistic muscles are put at equilibrium. If one has a painful hip joint with a flexion deformity, that hip is almost sure to remain more or less painful, even if it be absolutely immobilized, just as long as one group of muscles has a mechanical advantage over another group. If, however, the limb is placed in such a position that the muscles are in absolute equilibrium, all the muscles being placed at the same mechanical advantage, the group which has been contracted will soon relax. This point is not well enough comprehended and too often lost sight of in the treatment of all painful joints. When a patient comes to me with tuberculosis of the hip with pain and flexion deformity, I put the patient under an anesthetic, reduce the flexion deformity, put the antagonistic muscles at absolute equilibrium, and immobilize the pelvis and thigh in this position by a plaster-of-Paris spica. It is astonishing how quickly pain ceases in almost every instance, without any further treatment, just as soon as this condition of equilibrium and fixation is established. It is often not even necessary to put these legs in extension, the mere fact of securing muscular equilibrium and fixation being sufficient to relieve the pain.

Six or seven years ago I had a little experience with a series of tubercular spines which taught me a lesson which is applicable to all forms of tuberculosis of bones and joints. I had several severe cases of Pott's disease, which were placed in plaster-of-Paris jackets while they had pyrexia. With complete immobilization the pyrexia subsided, slowly disappearing entirely in three or four weeks. At that time I had a mistaken notion that for hygienic and esthetic reasons it was necessary to remove the plaster-of-Paris jacket every three months. As I did this I made the following observations: When the plaster-of-Paris jacket was removed for the purpose of bathing the patient, and left off for several days, the pyrexia would return. I found that it would take several weeks again before the temperature would become entirely normal, and consequently I had made the patient distinctly worse by removing the plaster jacket. Since this, I have learned that a patient can be kept comfortably clean with a plaster-of-Paris jacket in place for two years, and I have left my plaster-of-Paris hip spica in place from six to twelve months, thereby reducing the time required for the healing of the tubercular process very materially. My great objection to the use of mechanical appliances in hip disease is that they do not, as a rule, immobilize sufficiently, nor are they left on long enough at a time. The patient is constantly removing them and exposing his hip joint to harmful motion. This is impossible with the plaster-of-Paris spica; it cannot be tampered with, but actually immobilizes the joint.

At first I have the patient walk with crutches and a high sole under the well foot, applying extension at night, if there is any pain whatever. When there has been no pain in the hip joint for six months, and the patient can bear the weight on his affected limb without pain, I allow him to walk without the high shoe for another six months, and when I feel perfectly sure that the tubercular process has completely healed out, I continue the immobilization for a further six months. In this way I have been able, so far as I know, to avoid relapses.

Dr. Frederick Mueller:--Nearly all cases of hip disease which come under our observation can be classified among the cases of localized tuberculosis. Professor Eduard Albert in Vienna, as early as in the seventies of the last century, was one of the first to point out that localized tuberculosis of bone heals spontaneously in children, provided they are put under hygienic conditions. From this point of view we may say that the prognosis of a case of hip disease is good in a general sense. Also, general dissemination of the tubercular process is more rarely found in cases of hip disease than in other cases of localized bone tuberculosis, like, for instance, cases of Pott's disease. One of the first symptoms to which I should like to call attention is the position of abduction. In fact, abduction and not flexion is the first sign which we observe in a case of hip disease. Very often we see cases of beginning hip disease in which there never was any pain or restriction in motion, but if we have the child lying down on the table, we always will find the never absent lengthening of the leg by which the fold in the inguinal region appears shorter on the diseased side than on the side which is not affected.

As far as the treatment is concerned we can discriminate between the conservative and the radical treatment. Several of the gentlemen, who spoke before, alluded to two methods of conservative treatment, one of which aims to prevent weight bearing and the other of which tries to arrest motion. Lorenz, in Vienna, was the first to study these questions and pointed out that the arrest of motion, that is, immobilization, is more important for the healing of the tubercular process than extension or rest as to weight bearing. The result of this investigation was that Lorenz designed a short spica which extends only to the knee-joint, and which has been demonstrated by Dr. Ridlon to-night. Dr. Blanchard has referred to an operation which recently has been advocated by Lorenz, and which consists in the excision of the head of the femur with the capsule. This procedure will shorten the whole process and bring forth bony ankylosis of the joint in a good position. Lorenz calls this method a radical method and advocates it for cases where pain and serious symptoms set in very

rapidly, where we have high fever, and yet no external sign of the formation of an abscess. It is only in such cases that Lorenz wishes the operation to be applied, and he advocates for all other cases the conservative method of treatment. In this way we can not say that Lorenz has changed from the conservative method of treatment to the radical one, if he advocates the latter one for special cases only.

Of course, bony ankylosis is seldom found in healed cases of hip disease. I think we have not more than about 5 per cent. of cases of real bony ankylosis in healed joints, and every one who has performed operations for contractures in adduction (what the English call short-leg) knows that in almost all such cases it is possible to merely redress the deformity and to lengthen the shortened leg materially by putting it into an abducted position.

As far as the removal of the whole tubercular focus is concerned, we have to consider that it is very difficult to remove it, in fact, as difficult as it is to radically remove a malignant tumor like cancer or sarcoma. In the beginning, the tubercular focus is localized; very soon, however, it becomes larger, and we not only have a focus which is limited to one single tissue, but which infects very soon all the different tissues in the neighborhood. If we had a method of locating the tubercular focus at a very early stage, the so-called radical methods, which mean the elimination of the tubercular focus, could be advocated; but neither the x-ray picture, nor any other methods give any direct indication of the seat of the focus as long as it is such a small one, that it is really confined to the bone, capsule or cartilage alone.

Dr. Edward Ochsner has introduced a new term which he calls the restoration of the equilibrium by redressing the faculty position of the leg in the beginning of the disease. As far as the position of flexion is concerned this procedure can be justified. So far as the position of abduction is concerned, however, I can not advocate Dr. Ochsner's procedure. If we correct the abduction we do not only cause the patient pain, but favor the tendency to adduction, which always becomes apparent in the latter stages of the disease, and against which we have always to struggle. In other words, the keeping of the leg in abduction is the surest and easiest way to fight the tendency of adduction which sets in later on, and therefore the position of abduction which forms one of the earliest symptoms should be left alone.

Dr. Norman Kerr:—I did not expect to be called upon to participate in this discussion. I wish to say, however, that I have treated two or three cases of hip joint disease by the radical removal of the tubercular focus, and have had the pleasure of seeing prompt recovery.

I do not think sufficient stress has been placed on the pathology of this disease; it ought to elicit more discussion in a meeting like this. The use of the x-ray ought to be insisted on in the early stages of hip-joint disease. I think the reason why orthopedic men do not take to the radical removal of the tubercular focus is, first, because it is practically a new treatment, and, second, it has been the bad cases that have been subjected to the treatment, and these bad cases present almost insurmountable difficulties in the way of the radical removal of the tubercular focus. If the tubercular focus is not removed in a radical manner the result will not be favorable, perhaps no more favorable than it would be by the use of extension and fixation.

Dr. Ryerson:—After Dr. Harris got through speaking I thought I had been listening to a beautiful prose poem; that we could look into a hip joint, see a focus as large as the head of a pea, take a little curette, cut it out or remove it, and that is the end of it. As a matter of fact, what do we orthopedic men see, in the first place, in these cases? We see patients whose hip joints suppurate freely and disastrously, because some general surgeon has been pawing around in them with a knife, or else we see, in the early cases of hip-joint tuberculosis, such mild symptoms that the parents will not consent to a cutting operation any more than they would think of having the child's head cut off. The mother of the child will object to radical interference and say that her little boy has only rheumatism. That is what we get right along, and if we can hypnotize these patients to lie

down and operate on them radically, then I should say that treatment is preferable in some cases. Yet there is another difficulty which confronts us in that we do not know where the focus is. I have taken x-ray after x-ray, and have had them taken by good professional photographers, and yet I could not see a tubercular focus; it was there, and in a few years it made its presence evident. I agree with Dr. Harris when he says that if we can see a localized tubercular focus we should take it out. But I am not able to see that focus very often. Once in a while, when I can see the focus or foci with the x-ray, I find there is considerable territory invaded by the disease, so that it would perplex Dr. Harris or any other surgeon to remove all of the tubercular process. We can not always get the consent of parents to operate on these cases when it is indicated.

The mortality in uncomplicated hip disease is practically nil. I do not know of such a thing as a death from tubereulosis confined to the hip. I have had many eases of tubereulosis in which two or three abscesses have appeared at the side of the hip joint, which have not diseharged, in which absolutely no effect was shown on the patient's constitution. In the suppurative cases, however, which have been opened, the mortality is very great. It is true there is a certain mortality from tubercular meningitis, from tubercular phthisis, from occasionally intestinal tuberculosis, which will occur whether the hip is opened or not. But we must remember that even if we do remove the tubercular focus it does not mean that the mortality rate is not going to be continued just the same, because the cervical or mesenteric glands are still there, and a patient is liable to die of tubercular meningitis after the removal of the tubercular focus in the hip joint, because that is secondary to tuberculosis elsewhere.

Dr. Wallace Blanehard:—As to the removal of the tubercular focus, Dr. Ochsner has referred to what he calls a new operation, one that we as orthopedists are not familiar with, possibly. Five years ago Dr. Taylor, of Baltimore, reported to the American Orthopedic Association something like twenty cases, and he was quite enthusiastic. Three years ago he reported again to the same association on something like forty or fifty cases, and he was not quite as enthusiastic as he was formerly, and at the last meeting of the American Orthopedic Association he had changed his views completely and said that an attempt to remove the foci usually increased the ravages of the disease. The great majority of these cases run the usual course of hip disease after the operation, which only serves to seatter the tubercular foci. Practically all the orthopedic men who were more or less enthusiastic some years ago as to the removal of the tubercular foci have changed their views in this respect very materially. Erasion of the foci has proved a failure and is no longer practiced by the best orthopedic surgeons.

Dr. John Ridlon:—I should like to say a few words in reference to the remarks made by Dr. Harris. I think we are fortunate to have a general surgeon explain his views in regard to the treatment of hip-joint disease, and for him to acknowledge that so great a surgeon as Watson Cheyne expects a death rate of 40 per ecnt, in the cases he treats. Apparently the general surgeons expect that mortality. It is not, therefore, so surprising that so many of these patients die. It is surprising that so many patients live when treated by the general surgeon. Many of the things we have to say must be said more or less dogmatically. Dr. Harris has been dogmatic. You have to take his say-so on the one hand and my say-so on the other hand. There is not enough time to argue it out. He led you to believe that if you could go down and remove the tubercular focus in the hip you could eure the case in the time that it would take a broken bone to heal, i.e., four weeks. Yes, if you could do it, and he led you to believe he could do it, but you can't do it. How do I know you can't Twenty years ago George Arthur Wright, of Manchester, England, reported his first 100 cases of radical excision of the hip joint for early hip disease, not scraping out the tubercular focus, but removing the whole upper end of the femur and aeetabulum. In going through his hospital in Manchester sixteen years ago I saw at least a dozen cases he had operated on from two to four years before, and which had been reported as cured cases. They had come back with recurrences of the disease in those hip joints. When you have

operated on a hip joint, have removed the disease, the wound is healed and the patient no longer suffers pain and is discharged, is that the end? No. It is only the beginning. True, the operation is successful, but the patient is not cured. He may never have any more tuberculosis in that hip joint, but he may have tuberculosis in a week, a month, a year, five years or twenty years after. But that is not a cured case. What is a patient with hip-joint disease entitled to? The most useful limb he can get, so that he can earn his living. The best result, functionally, from operative treatment of a hip-joint disease is worse than the worst result, had the patient with hip disease never seen a doctor.

Dr. Harris led you to believe that 40 per cent, of all cases will die if not treated. I will tell you that if they are not treated at all no more than 10 per cent, will die. He told you that he has excised hip joints and has never got ankylosis. He did not tell you that he had no loose joints. He did not tell you that he had no useless lcgs as the result of excision or other operation. It is the loose leg, the useless leg, that is a curse to the patient who is operated on, and not the ankylosis of the hip. He told you that in an infarction focus, where the cartilage was destroyed, the patient must have an ankylosed hip. That is not so. I have seen cases with destruction of the cartilage, where bone grated against bone, recover with normal motion. What I have seen I know; but a man who has never seen it may not believe it. He is justified in not believing it if he has not seen it. He has told you that the patients are discharged as cured by mechanical means and that the disease returns after twenty years. It is true cases are reported as cured by many men, orthopedic men, general surgeons, general practitioners, that are not cured. I saw within a year a doctor from Northern Indiana who was treated by an efficient method mechanically for a considerable time. He was pronounced cured; he believed himself cured; he had no pain; he had nothing except a little limp. There was a stiff joint, and it has remained in that condition for more than twenty years. Recently, within a year, he experienced a little discomfort in his hip; he was inclined to take to crutches again. He came to me for examination and I found that there was an infarction focus with a sequestrum as big as a marrowfat pea that had been there for over twenty years. We can have infarction which does not necessarily produce ankylosis. It can stay there for twenty or thirty years and give the patient no discomfort, and he may die from some intercurrent affection without knowing he was not cured of his hip disease. We can have patients go untreated who will apparently get well; some remain well and some have a recurrence of the disease. You may treat some of these patients mechanically and some will remain well, while others will have a recurrence of the disease. You may operate on some of these patients radically, and some of them apparently will get well, while others will have a recurrence of the disease. That is all true, and when a man says that a thing can not be because he has not seen it he is saying too much. When a man says he can remove the tuberculous disease from a patient by operating on a focus in the hip, thus rendering the patient perfectly well and safe for all future time, he makes a most extraordinary statement.

When Dr. Harris told you that he could operate on these cases and effect a cure in four weeks he ignored the work of Battle, of London, published some eighteen years ago. Battle excised forty or sixty hips, carefully watched and treated them, and found that it took just as long to cure these patients after operation by giving them mechanical support as it probably would to have cured them if they had not been operated on at all. It took him an average of three years. We can not cure all these cases; we can cure some of them. If we take into consideration the statistics of the orthopedic institutions in this country, such as the Orthopedic Hospital and Dispensary and the Hospital for Ruptured and Crippled, in New York, we will find that of the many cases that have been treated by mechanical means they do not show a death rate over 10 per cent. I would rather have a child of mine, if he had hip disease, never see a doctor than to have his joint injected with iodoform emulsion or cut into. I say this from experience. I have had a child with hip disease and I know how it feels. The

diagnosis was made by Dr. Charles McBurney, of New York. I do not want any child of mine treated by a cutting operation.

Dr. William Fuller:-I would like to say a word about tuberculosis of the hip. The term hip includes several structures, any one of which may be the starting point of tuberculosis. But as regards tuberculosis of the upper end of the femur, it seems to me to be a lesion just as amenable to surgery as does a similar condition of any other bone. A surgical operation cures tuberculosis of the ribs, the bones of the head and of the tibia, for instance, and will cure, as Dr. Harris says, tuberculosis of the hip if the diagnosis is made early enough and the operation is complete enough. Complete removal of tuberculous foci in bone or soft tissues is certain to be followed by a cure and applies to the femoral head as it does to any other hone. Failure to cure such a lesion should not argue against the operation itself, but should ereate the suspicion that the diagnosis was made very late and that the operation was incomplete. Many cases will have progressed, long before a positive diagnosis can be made, to that degree in which operation will avail nothing, and such cases are best managed by other means. A localized lesion of tuberculosis, superficially placed in some very accessible bone, would be attacked surgically by every surgeon, and identically the same procedure should be employed for tuberculosis of the upper end of the femur or for any other part of the hip, provided the diagnosis is early and certain. An unfortunate result in the operation for tuberculosis of the hip, even coming as it did to the family of the previous speaker and as related by him, should not prejudice the surgeon's mind against a procedure offering the only rational means of permanently curing surgical tuberculosis.

Dr. M. L. Harris:—Dr. Ridlon has said that I did not say how many flail joints I had. I did not state it because I have not had any. Not a single flail joint has followed the removal of the tubercular focus, when the diagnosis has been made early, and not a single muscular attachment has been disturbed. Every patient has had a useful joint; they have walked on them; they have movable joints and not a single case has been under treatment over six months. Dr. Ridlon can not show such results with mechanical treatment. We talked about removing the tubercular focus from the hip, not tubercular glands from the neck or chest. Every spontaneous cure of tuberculosis of the hip is not a cure, because the tubercular germs remain there in a latent condition. That is why these patients have recurrences. That is why they do not get well. The germs are there in a latent condition and the disease may start up again in twenty or thirty years. Dr. Ridlon confirmed everything I said about the spontaneous cure of tuberculosis, but he did not confirm what he has never tried, namely, an early operation on a hip joint case.

Dr. Wallace Blanchard:—I wish to say a word or two as to what we observe in the Home for Crippled Children. Over 50 per cent. of the old incurable cases of hip disease that we are confronted with have come from the general surgeons. They have been operated on, either a portion or the whole head of the femur having been removed for the erasion of the tubercular foei. These patients come back to us, continue treatment with us and are with us all the time. The local tubercular disease has been disseminated by the operation. The acetabulum and the shaft of the femur have become diseased and pus-discharging sinuses never close. That, in brief, is our experience at the Home for Crippled Children.

Dr. John L. Porter:—I would like to ask Dr. Harris how many times he has taken early skiagraphs of hips and not been able to find the tubercular focus? I have tried the same scheme in many of these early cases that present muscular spasm and flexion deformity, limp and pain, but have not been able to find any focus that would tell me where the disease is from the x-ray picture. I would also like to ask Dr. Harris whether he has ever invaded a joint to find a focus that he saw in the x-ray plate and not find it there?

I must say that Dr. Harris' statement in regard to the results he has had in the early removal of tubercular foei from the hip are remarkable. I believe that very many of the eases which Dr. Harris operated on so early and got such excellent results would get perfectly well if they had not been operated on and were treated carefully by mechanical means, because we all of us see many of these cases that are treated successfully by mechanical means and immobilization. That is the point I wanted to make in talking about early diagnosis. We see many cases early that get so well that Dr. Harris could not tell which leg had hip disease, because the patients were treated early by mechanical measures, by careful immobilization and relieved from weight-bearing at the same period that Dr. Harris would invade the joint.

Dr. Hosmer (closing the discussion):—I would like to ask Dr. Harris if he finds it possible by radiographs to determine accurately, as proven by operation, all the tubercular foci? Furthermore, if he thinks it possible by radiographs to show any involvement of the capsule, particularly in those cases in which the tubercular process starts in the epiphysis of bone? While at a certain period there is involvement of the capsule, I do not think any man can positively settle that by any number of x-ray pictures. You may obtain an excellent x-ray picture; you may be able to locate one or more tubercular foci, but you are likely to find other foci that have broken through or have opened into the joint cavity. You have infection of the capsule and you do not know anything about it in advance, and you can not detect it macroscopically. Such cases are certainly put in extreme peril.

I do not know what the experience of Dr. Harris has been, but those cases of hip disease attended with a mortality of 40 or 50 per cent. are cases of mixed infection. It is admitted by good authority that in ordinary private practice in this country the mortality does not exceed, if it equals, 5 per cent. in mechanically treated cases.

Dr. M. L. Harris:—Yes, I have had x-rays taken of hips that did not show anything, and if I had a case in which the x-ray did not show anything I would not operate. You will remember I stated I would only operate where I could localize the focus or foci. I admit that many of these patients get well without operation. I said I would not operate on all cases. The cases to be operated on are selected. The large majority of these cases will get well under proper treatment, but the question is whether the treatment shall extend over a period of three years or a few weeks.

DE WITT COUNTY.

The De Witt County Medical Society celebrated its fiftieth anniversary in Elks' room, Clinton, Ill., April 10, 1906, President J. M. Wilcox in the chair. The minutes of last meeting were read and approved. The following were present: Drs. J. H. Tyler, Wilcox, Edmiston, Craig, Harter, Kirby, Chapin, Kohn, Davis, Zeigler, Edmonson, Dowdall, Campbell, also Drs. J. H. Stealy, of Freeport, and J. N. Dixon and E. E. Hagler, of Springfield, and Dr. Van Hook, Mt. Pulaski.

Dr. Campbell reported a case of consolidation of the lower half of the right lung, with subnormal temperature and slow pulse after the first day. Dr. Kirby reported a case of hysteria, with fever. Dr. J. N. Dixon then read an excellent paper on Diagnosis of Concussion and Compression, which was discussed by Drs. Dowdall, Edmonson and Stealy. Dr. J. H. Stealy read a classical paper on Appendicitis with Adhesions—Differential Diagnosis from Other Abdominal Inflammatory Conditions. The paper was discussed by Drs. Davis, Kirby, Dowdall, Campbell and Dixon.

The society then adjourned to a banquet dinner until 1:15 p.m., when business was resumed by Dr. Dixon reading a paper entitled A Rarc Case of Traumatic Tetany, which was discussed by most of the members present. Dr. Campbell read a practical paper on Puerperal Sepsis, which aroused an exceedingly vigorous and interesting discussion. As all the visiting and out-of-town physicians wished to visit the new Warner Hospital before the trains left, the society postponed the election of officers and the retiring president's address until next meeting.

A. E. CAMPBELL, Secretary.

JASPER COUNTY.

The Jasper County Medical Society met at the Courthouse, Newton, Ill., April 7, 2 p.m. The meeting was due to the coming of Dr. J. N. McCormack, organizer for the American Medical Association, who delivered two very interesting and instructive addresses to the physicians and the laity of Jasper County in the afternoon and evening.

At the close of the afternoon meeting the chair appointed a committee of three to nominate officers for the coming year. At the evening session the following officers were elected: President, Dr. H. S. Hinman; vice-president, Dr. John H. Maxwell; secretary, Dr. James P. Prestly; treasurer, Dr. W. E. Franke; board of censors, Drs. E. E. Burton, W. A. Wens, S. P. Berns. Dr. McCormack's evening address was listened to by a good audience, which made up in rapt attention what it lacked in numbers. Ministers and lawyers responded in three-minute talks of an appreciative nature. The society feels satisfied that Dr. McCormack has made a good impression upon the public that will eventuate in good results. Drs. Rafferty and Barlow, the latter our worthy councilor, were welcome visitors.

James P. Prestly, Secretary.

JERSEY COUNTY.

The society met at the Commercial Hotel, April 4, at 7 p. m. Members present were Dr. J. S. Williams, in the chair, Drs. Barnett, Van Horne, Proctor, Erwin, Gledhill, Gibberson, Hunt and Bohannan. The minutes of the previous meeting were read and approved. The election of officers for the ensuing year resulted in the choice of Dr. A. K. Van Horne for president, Dr. A. A. Barnett for vice-president and Dr. H. R. Bohannan for secretary-treasurer. The censors for the following year are Drs. J. S. Williams, H. R. Gledhill and A. D. Erwin. The physicians then retired to the banquet hall, where supper was served, after which Dr. Norbury, of Jacksonville, read a very interesting paper on the motor and sensory disturbances of the spinal cord, which was listened to with much attention by all present.

There were present at this meeting sixteen physicians, eight nurses and two newspaper reporters. From out of town were Drs. Norbury and Herriott, of Jaeksonville; Drs. Cook and Bowman, of Alton, and Dr. Smith, of Godfrey. Dr. A. M. Wiles was also in attendance. The history of the Jersey County Medical Society was read by Dr. A. K. Van Horne, who is the only charter member now living.

A. K. Van Horne, M.D., Secretary.

HISTORY OF THE JERSEY COUNTY MEDICAL SOCIETY.

A. K. VAN HORNE, M.D.

Having been asked to relate the organization and history of the Jersey County Medical Society, and not being able to find any of the books and archives of the society, I shall have to depend on my memory of the organization and later on some newspaper elippings kindly furnished me by Dr. Barry.

On the first Saturday in April, 1856, as I was about to leave for my father's farm, Dr. Herriman notified me that the physicians of the town and county were to meet at Dr. White's office for the purpose of organizing a medical society, and asked me to remain and attend the meeting. I accepted the invitation. The meeting was called to order by Dr. E. A. d'Arey, who was chosen president, and Dr. L. A. Brewster as secretary-treasurer.

The doctors present from Jerseyville were d'Arey, Knapp, Perry, Hutchinson, Hamilton, White and Herriman; from Fidelity, Bringhurst, Jay and Dennison; from Grafton, Vietch, and from Fieldon, Wynans.

I was niged to join the society, but objected, as I didn't expect to locate here, but in some other place, where people had not known me from childhood. Dr. d'Arey insisted that I should be able to tell people where I did locate that I was a member of my home society, and I could not afford to miss this opportunity of associating myself with our home medical society. This appeal of Dr. d'Arey was

unanswerable and I joined and gave one of my twenty dollars, which was all I had left after getting home from lectures. This was hardly enough to start out to hunt a location to practice medicine, therefore I decided to try my luck here and have been here ever since.

Our meetings, as I remember them, were held quarterly for a time and then monthly, which gave a better attendance. After the first year Dr. A. R. Knapp was elected president and Dr. Brewster continued to hold the office of secretary and treasurer for a number of years. Dr. Bringhurst moved to Jerseyville and formed a partnership with Dr. White. Drs. Perry and Hamilton, Drs. Harriman and Brewster were also partners in those early days.

We invited in the brother physicians from Green and Macoupin Counties and later from Morgan County, and then we would meet with them at their home towns. The Medical and Surgical Society of Western Illinois was organized at Whitehall in 1882, I think. This society was composed of physicians of Green, Morgan, Madison and Jersey Counties. We had many profitable and pleasant meetings, and while this district society, to some extent, took the place of the Jersey County Medical Society, it never supplanted it. We never failed to have annual meetings and have usually had meetings either quarterly or monthly.

Among our membership I remember with much pleasure the names of Drs. A. R. Knapp, E. A. d'Arcy, James Perry, H. C. Herriman, L. A. Brewster, James Bringhurst, J. L. White, Hutchinson, James Vietch, of Grafton; Wynans, of Fieldon; our visiting brother, Dr. Samuels, of Carrollton, who was what every physician ought to be—a perfect Christian gentleman every day in the week and every hour in the day—and also Dr. Clinton Armstrong, of Carrollton, who was a good match for Dr. Samuels. Later on we had Drs. E. L. Herriott, of Grafton, and J. T. Curtis, of Otterville, also Dr. J. S. Williams, of Otterville, who, I am pleased to say, is still with us and resides here in Jerseyville. Dr. Peter Finity, of Kane; Dr. John Ash, of Brighton, and his son, John Ash, Jr., and also Dr. C. A. L. Reed, of Fidelity, now of Cincinnati, are counted among our worthy members. Dr. W. O. Langdon, of Delhi, now of Springfield, was for a number of years an active and important member, as were also Drs. Charles Edgar, G. Gallaton Lyon, Caleb DuHadway and John B. Hamilton. Dr. Hunter, of Fidelity, and Dr. J. L. Ward were active members in 1882.

At the annual meeting in 1883 Dr. DuHadway was elected president; E. L. Herriott, of Grafton, vice-president, and E. L. H. Barry, secretary and treasurer. Drs. Scott, of St. Louis, and Harvy, of Fieldon, were elected to membership at the meeting of the Jersey County Medical Society, Aug. 6, 1883. Members present: Drs. McAdams, of Newburn; Curtis, of Otterville; Herriott, of Grafton; J. B. Hamilton, of Kane; Barry, Ward, Van Horne and J. O. Hamilton, of Jerseyville. Mr. Thomas J. Selby read a paper on the duties of the medical witness and expert, which was clearly and thoroughly delineated. With the death of Dr. J. L. White, of Bloomington, the last of the charter members of the Jersey County Medical Society, except myself, have passed away.

Our present members are Drs. J. S. Williams, A. A. Barnett, L. T. Waggoner, H. R. Gledhill, H. R. Bohannan, M. B. Titterington, E. L. H. Barry, A. M. Cheney, A. A. Shobe, Joe Enos, A. S. Hunt, J. A. Flautt, J. Tidball, Wesley Park, A. D. Erwin, O. O. Giberson, John R. Ash, Frank Finity and A. K. Van Horne. The Jersey County Medical Society has been favored at times with scientific papers from brethren of neighboring towns, as Dr. Emory Lanphear, of St. Louis, Dr. Carl Black, of Jacksonville, and others. For a time our society was in a lethargic condition. During 1903 and 1904 we had only four meetings, but during the last year we have had a meeting each month, and I am pleased to say that our society is in a good healthy condition.

M'LEAN COUNTY.

The annual meeting of the McLean County Medical Society was held in the assembly hall of the Illinois Hotel at 6 o'clock, Thursday evening, April 5, 1906. The following resolutions, introduced by Dr. J. B. Taylor, chairman of the committee on health and sanitation, were adopted:

"Resolved, That this society strongly recognizes health conditions as of first importance to the city.

"Resolved, That in view of the known and demonstrated beneficial relation of municipal destruction of garbage by fire to municipal health, and in view specifically of the fact that installation of that system in reliable form in Bloomington for the coming warm season will save lives as well as add to the facilities for maintaining the good appearance of the city, we urgently request the mayor and his associate officers to make such installation so as to be of service the present year.

"Resolved, That the secretary be instructed to forward a copy of these resolutions to the mayor, respectfully making this request."

There was an election of officers for the ensuing year, which resulted as follows: President, Dr. Thomas W. Bath; vice-president, Dr. Albert W. Meyer; secretary-treasurer, Dr. O. M. Rhodes; censors, Drs. J. K. P. Hawks, E. L. Brown, J. L. Yolton; delegate to state convention, Dr. E. Mammen; alternate, Dr. Frank Wakefield.

A case of extrauterine pregnancy was reported by Dr. Rhoda-Galloway Yolton and the fetus exhibited to the society. The report is as follows:

A CASE OF EXTRAUTERINE PREGNANCY.

Mrs. H., German, aged 38, married seven years, never was pregnant before; had always had pain and headaches at her menstrual period. Menstruated last May 3, 1905.

I was called to see her July 26, 1905. She was having pain in the pelvis and had vomited some and had some fever. I made a pelvic examination and found the uterus was very tender and fixed, with an exudate present. I gave morphin, cathartics, and ordered hot douches. I called the next day and found her more comfortable. I saw her every second day for a couple of weeks, when the tenderness and pain had about gone and I diagnosed pregnancy. I was called again October 14. The patient was having some pain and had felt life. I did not see her again for some time, but told the husband to watch her closely and keep me posted as to her condition, for I feared extrauterine pregnancy. He reported one day that a membrane had come away. I was disappointed that he did not bring it to me, for I believed it must have been the decidua. The patient felt life for over one month, or until near the end of November, when she sent me word that she had ceased to feel life. She was feeling well, so I asked the husband to keep me posted, and after nine months had passed I made an examination, passed a sound, found the uterus of normal length and a tumor on the left side and another to the right side of uterus. I then asked for an operation, but first asked for counsel. Dr. Chapin was called in and advised an operation for removal of the tumor. Later Dr. Edson Hart was called and he also advised operation. The patient was sent to Brokaw Hospital, March 11, 1906, and I operated March 12, assisted by Drs. Hart and J. L. Yolton. The fetus lay to the left side, free in the abdominal cavity, except for some cobweb adhesions, and was covered by an adherent membrane. The placenta was attached to the right broad ligament. The patient made an uneventful recovery, with the exception of a little rise of temperature and pulse on the sixth and seventh days, due to bronchitis. She left the hospital in just three weeks from the day of operation. I was slow in recognizing extrauterine pregnancy, for I expected to find much more severe symptoms than I did here, and carly diagnosed my case pelvic peritonitis, with exudate, and treated it accordingly.

The committee on arrangements was instructed to invite the various societies of the city to be present at the address to be given by Dr. J. N. McCormack, April 14, 1906.

Dr. E. Wyllys Andrews of Chicago, was a guest of the society and essayist of the evening. His subject was "The Year's Progress in Surgery." Among many interesting things Dr. Andrews spoke of the stimulating effect of adrenalin in anesthesia; the dry cocain method in spinal anesthesia; the intraspinal and subdural injection and injection into nerve plexuses of antitoxin in tetanus; the

end-to-end suture of vessels and consequent transplantation of the heart; dislodgment of foreign bodies from the esophagus by distention with gas by Seidlitz powder; massage of heart through the abdominal cavity in ehloroform collapse; ligation of hepatic artery, enabling more extensive resection of liver; anesthesia from injection of scopolamin, gr. 1/100, and morphin, gr. 1/6, at intervals of four, two and one-half hours before operation; the effect of this anesthetic is ideal, but the report of sixty cases with two deaths does not seem to warrant its risk. The society feels specially honored in having such men as Dr. Andrews address it.

This ending the business meeting, the society adjourned to the ordinary of the

hotel for dinner.

O. M. Rhodes, Secretary.

MORGAN COUNTY.

A meeting of physicians resident and practicing in the city of Jacksonville was held in the medical room of the Library, March 31, at 8 p.m. Formal invitations to attend this meeting were issued by the secretaries of the Morgan County Medical Society and the Physicians' Club of Jacksonville without reference to membership in either of these bodies. There were twenty-one doctors present. Dr. Pitner was elected chairman and Dr. Reid secretary. The chairman called the meeting to order and stated the object thereof. He stated that a meeting of committees from certain churches, the Hospital Aid Society and the Morgan County Medical Society had been called to consider the reorganization of Passavant Hospital of this city at an early date, and the present meeting of physicians was called to consider the advisability of action on the part of the medical profession in view of their interest in the hospital.

Dr. Hairgrove spoke of the action of the directors in Milwaukee and their proposal to place the concern in the hands of a local board under proper restrictions and conditions. Dr. Black proposed for consideration a set of resolutions, which were freely discussed and voted upon, section by section, and after sundry amendments were unanimously adopted. The following are the principal points:

1. There should be a medical staff, composed of every duly licensed reputable physician in the city, which should formulate rules for nursing the sick, for conducting the training school for nurses and that the staff itself should be the sole judge of reputable and honorable conduct among its members.

2. Admission to the hospital should be through application to the president of the staff, and all business of the hospital pertaining directly to eare of patients, training of nurses, etc., be under the direct supervision of the president of the

staff.

3. That three members presented by the staff be elected by the board of trustees as members of the board of trustees, with equal powers with other trustees.

4. That the staff elect two members annually, who, with the president and the clerk of staff and dean of training school, should constitute a medical advising board.

5. That Drs. Pitner, Hairgrove and Black be a committee to represent this meeting and to present these resolutions at the coming meeting of the board of

trustees of the reorganized Passavant Hospital.

By invitation of the Morgan County Medical Society, Dr. J. N. McCormack, of Bowling Green, Ky., gave an open lecture before the doctors and the public of Jacksonville at the public library, April 10. His subject was "The Relation of the Medical Profession to the Public." The meeting was largely attended, both by doctors and others, there being present twenty-seven doctors. Dr. McCormack has been heard too often by the readers of this Journal to justify any attempt at synopsis. Both the doctor and his audience were immensely pleased with each other and many expressed the wish that he would visit Jacksonville again soon. After the lecture the doctors present, with their wives, adjourned to the residence of Dr. D. W. Reid, where an informal reception was given in honor of Dr. McCormack.

Dr. McCormack's work in Morgan County was very arduous, and, as planned for him beforehand, meetings were held in Jacksonville and neighboring cities, requiring two and three addresses a day. In most of these places the doctor met with an enthusiastic reception.

The regular meeting of the Morgan County Medical Society was held as usual at the public library, Thursday, April 12, with President Josephine E. Milligan in the chair, eighteen members being present. Dr. R. R. Jones, of Woodson, was elected to membership. Dr. A. M. King read a paper on "Pleurisy," and Dr. J. W. Hairgrove a paper on "Empyema." These papers were freely discussed. Dr. Herbert Potts had several specimens of effusion drawn from the pleural cavity, illustrating the condition at different stages of the disease with microscopic preparations of the same.

On motion it was decided that a committee be appointed to prepare a pathologic exhibit each month in the medical room independent of the regular meeting of the society.

Dr. T. J. Pitner, as chairman of the committee on reorganization of Passavant Hospital, reported the work of that committee. His committee had met as directed with the board of trustees, and a committee had been appointed to frame a set of by-laws for the reorganized hospital, and his committee had decided to present the resolutions at the coming meeting of the said by-laws committee instead of at the meeting of the board of directors. They would be so presented and further action of the committee reported later.

The following resolution was adopted:

"Resolved, That it is the opinion of the members of the Morgan County Medical Society that in reorganizing Passavant Hospital the by-laws should provide that the medical staff should be represented on the executive committee of the board of trustees and that the committee of this society present this resolution to the board of trustees for their consideration."

PEORIA COUNTY.

The two meetings of the Peoria City Medical Society during March were two very interesting ones and were very well attended by members of the society. At the meeting of March 6 we listened to a very interesting paper by W. A. Hinkle on new drugs, which was very freely discussed by members present. At this meeting Dr. Will, councilor for this district, called the attention of the society to the coming visit of Dr. McCormack on April 18. On motion the chair appointed a committee of five to arrange for the visit of Dr. McCormack and his entertainment while in the city. The chair appointed as this committee Drs. Gelder, Will, Collins, Kanne and Thomas.

At the meeting on March 20 the following members were present: Drs. Roberts, Whitten, Davis, Lucas, Marcy, Thomas, Brobst, Hanna, Kelly, Allison, Sedgwick, Horwitz, Gelder, McFadden, Collins, Floyd, Hayes, Kerr, Kanne, Stepbenson, S. M. Miller, Wulstein and Sidley. Dr. Floyd presented a very interesting ease of trachoma and pannus, showing the relationship between the eye and the nose. Dr. Sidley presented a case of complete cleft palate, on which he had operated four weeks previous with very successful results. Dr. Gelder made a report of the visit of Dr. McCormack, going into the details of his visit and giving the plans for his entertainment. On motion his report was accepted. The fee bill was acted upon and on motion of Dr. Kanne the bill was adopted as a whole. Dr. Allison made a motion that the fee bill be printed large enough to hang in an office and to appoint a committee of three to publish in the daily papers notifications to the public of certain parts of the fee bill, which was carried. The chair appointed Drs. Hayes, Miller and Lucas as that committee, to submit a report at the next meeting.

At this meeting we had the pleasure of listening to an exceedingly interesting paper by H. M. Sedgwick on Aphasia." (See page 465.)

The society is looking forward to a jubilee month in April, as we expect to have Dr. McCormack on the 18th, a paper by C. U. Collins on the 3d and Dr. Sippy, of Chicago, is to give a clinic on the 17th. The secretary is very pleased to report that the attendance at our meetings is becoming larger and that the society is in a very enthusiastic condition.

F. K. Sidley, Secretary.

PIKE COUNTY.

The Pike County Medical Society met at the office of Dr. Duffield in Pittsfield at 10 a. m., April 9, 1906. Members present: Drs. J. G. McKinney, J. E. Melton, T. W. Shastid, R. J. McConnell, C. E. Beavers, J. Estill Miller, J. Smith Thomas, L. S. Lacy, H. C. Loveless, G. U. McComas, W. E. Shastid, R. H. Main, L. J. Harvey, H. T. Duffield, R. O. Smith, F. Marion Crane and J. H. Barber. Visitors: Drs. A. L. Adams, of Jacksonville, and J. N. McCormack, of Kentucky.

The society was addressed by Dr. McCormack, after which it adjourned until 1 p.m. in the circuit court room, where Dr. McCormack delivered a public address. Adjourned and reassembled at 2:30 p.m. at Dr. Duffield's office. Minutes of previous meeting were read and approved. The committee appointed at the last meeting to try to adjust pauper fees with the board of supervisors reported that no satisfactory adjustment was made. Committee discharged. On motion Drs. S. B. Peacock, F. M. Thurman and H. T. Duffield were appointed to make another effort at adjustment with the board of supervisors concerning pauper fees for medical attendance.

Drs. F. M. Thurman, of Pearl, H. B. Andrew, of New Salem, and W. W. Kuntz, of Kinderhook were elected to membership. Dr. J. Estill Miller read a paper on "The Treatment of Pneumonia," which was discussed by Drs. Thomas and Smith. Dr. W. E. Shastid addressed the society on the subject of "Adenoids." Dr. R. J. McConnell read a paper and offered resolutions which were adopted, on the subject of "Life Insurance Fees."

LIFE INSURANCE EXAMINATION FEES.

Dr. R. J. McConnell.
BAYLIS.

It will take no great amount of argument on this subject, I think, to pass some resolutions I have in mind on the subject of life insurance fees; at least, that is the way I feel it should be. I have been thinking over this matter some two years. About that time I was appointed medical examiner of the New York Life Insurance company, and made two examinations for them, and discovered the fact that they paid but \$3.00 for an examination fee. I made no kick about it as I had no more business with them, but made up my mind then that I would make no more \$3.00 examinations. During this winter, while the life insurance companies were going through the inspectors' hands and there was so much talk of retrenchment in the salaries of officers and agents of life insurance companies, I thought it very probable that the poor doctor would get it in the neck about the next fellow down the line. I found by talking with the agents for three companies, besides the New York Mutual Life, that they were all seriously thinking about cutting the examination fee to \$3.00, and some even less than that. All of the agents assured me that they would do all they could to help hold the medical fees where they werc. Those agents knew that without the co-operation of the doctors throughout the country their business would be uphill work, in fact, would almost surely fail, from the fact that nine out of every ten applicants for life insurance is a personal friend of the doctor, and a few words of discouragement from him would probably lose the agent the risk, and, as a matter of course, the agent wants to see the doctor paid liberally enough to enlist his sympathy in the case.

Now, as a matter of fact, we believe there are very few doctors who do not believe in life insurance as a safeguard against a day of adversity that is liable to overtake anyone, no matter how carefully they may manage their affairs. There are uncontrollable circumstances, such as sickness, accidents, bad invest-

ments, etc., that may suddenly come, and then a well matured life insurance policy is a great comfort. And I think I am safe in saying that, according to number, more doctors carry insurance than any other class of people. Aside from the fact of guaranteeing us against a day of adversity, they are worth a great deal in the way of establishing the habit of saving. If we have a premium to meet at a certain date, we will naturally save up a few dimes, quarters and dollars to meet it, and will scarcely miss them, yet when the time comes we will have enough laid away to pay our annual premium, and in the course of a few years we will have a nice little nest egg laid away.

And now, as almost every state is taking hold of the matter of life insurance and placing restrictions and safeguards upon the manner in which the companies manage their affairs, I think and feel sure there will be more life insurance written in the next five years than there has been in any previous ten. This being the case, I think that we, as a medical society, should take some steps to guarantee that our fees are not cut in twain by any company whatever, as I think we fully earn every dollar we get out of it now. To be forced to do the work for almost half seems to me to be unnecessary. Now, if this reduction was really called for it would be different, but it is not. They cry retrenchments, they say, "we must cut our salaries, we must economize." True enough, if we had been getting \$100,000 as salary, or even \$50,000, we could well afford to cut it down, but we have not been getting any exorbitant fees, nothing more than we could make in doing other business. Then why jump on to the doctor? There is absolutely no reason, only he is a poor, unorganized fellow that perhaps needs the money, and if the first fellow does not the next surely will, so we can get it done for \$3.00 if we ask them to do it. Now that is all there is to it.

I received on February 15 a circular from the New York Mutual Life Insurance company stating that after March 1, 1906, the medical examination fees would be \$3.00 for all amounts under \$3,000, and \$5.00 for all amounts over \$3,000, and up to \$25,000, and \$7.50 for all amounts from \$25,000 to \$50,000, and \$10.00 for all amounts from \$50,000 to \$100,000. You see this virtually cuts the business in Pike county to \$3.00, for the great majority of insurance runs from \$1,000 to \$3,000. Enclosed with the circular was a postal card, saying to acknowledge receipt of circular and be governed accordingly. This was a pretty stiff bluff, but I did not take it, as I still have the card in my pocket and am going to keep it, at least for a while, until I see how my medical brethren receive the plan I have in mind. In case they do not take it up my cake will be dough any way, as I presume some one will notify them at headquarters that Dr. McConnell is on a strike and is trying to incite rebellion against their mandates. Now the facts in the case are these; that while I do not wish this society to think I want to compel any company to pay a certain fee, nor do I wish the companies to think that there is compulsion in the case, neither do I wish the New York Mutual Life Insurance company, nor any insurance company on earth, to send out mandatory circulars, saying, "We have decided to pay you so and so as fees." I do not feel that we are being treated right in not having a voice in the matter, for we have a voice, and a great one, if we feel so disposed to use it, and it is my firm opinion that now is the time to use it, and use it in no uncertain tones. Use it with such force that every life insurance company in our land will know that the doctors have at last awakened, and are standing for their rights and for their fees, and that we are organizing and organized, and that there is none so poor among us as to say we would rather have half a loaf than no bread, that in fact we are a unit standing for our rights, and that we consider ourselves much more indispensable to life insurance companies than life insurance companies are to us.

I doubt very much if there is a doctor in the state of Illinois that cannot get along very comfortably without the aid of any life insurance company, and, on the other hand, I think if the life insurance companies were deprived of the aid of the doctors their business would soon collapse. Then why submit to their mandates? That is just what it means, if we pass quietly over the New York Mutual Life's reduction, inside of two years there will not be a company in the

state paying any more, and why should they? If we can do the work for one company for \$3.00, we can do it for all, as the work is virtually the same.

Now I trust that anything I have said in regard to this matter will not be construed differently than I have meant it, as I am a friend of life insurance and am carrying all the insurance I can afford, but at the same time I want them to understand that the doctors are a party to their companies, and an important party, and one that they will have to recognize as having a voice in the adjustment of his fees.

I wish to state in regard to what I have said that none of this is meant to apply to our local or home life insurance companies, such as the Woodmen, Protective League, Pike County Mutual, etc. While I am not very enthusiastic over this kind of insurance, I feel that it has a place and a mission to fill, and does a great amount of good, and I would, therefore, not lay a straw in its way. Any agreement the doctors see fit to make with these home companies will be satisfactory to me, as far as I am personally concerned, and the resolutions I am about to introduce do not apply to them at all, but to what are usually known as old line life insurance companies, the ones with high-salaried officers and agents, and the fellows who seek to blow about how much reduction they are making in their salaries, and at the same time are drawing enough to make us opulent in a very few years. These are the fllows that the following resolutions are intended for:

Whereas, The medical profession is responsible to a large extent for the growth and welfare of the life insurance companies of the country; and,

Whereas, We view with regret the tendency and demands of the life insurance companies to cut the prices of medical examinations of applicants for life insurance to such an extent that we, as a medical profession, do not deem it proper or wise to submit to, in the present prosperous condition of life insurance companies; therefore, be it

Resolved, By the Pike County Medical Society, that the said reduction is unnecessary and uncalled for at the present time, in view of work necessary to be done and time spent in making a proper medical examination of an applicant for life insurance, and altogether out of proportion to the fees and salaries of agents and other officers of life insurance companies, the present reduction in salaries of the head officers notwithstanding; and be it further

Resolved, By this society, that we deprecate the proposed reduction in prices for making medical examinations of applicants in all old line life insurance companies, and urge the necessity of this society holding the standard price for making medical examinations in all old line insurance companies to be five (\$5.00) dollars for all examinations under the limit requiring the use of the microscope, and ten (\$10.00) dollars for all examinations requiring the use of the microscope; and, be it further

Resolved, That the secretary of this society shall have a copy of these resolutions printed and sent to each medical society in the state of Illinois, urging upon them the necessity of its adoption as a safeguard against the proposed reduction in fees for making medical examinations for all old line life insurance companies.

The dues for the ensuing fiscal year were fixed at \$2.00. The following officers were elected for the ensuing year: President, J. G. McKinney, Barry; vice-president, H. T. Duffield, Pittsfield; secretary-treasurer, R. H. Main, Barry; delegate, L. J. Harvey, Griggsville.

R. H. Main, Secretary.

ST. CLAIR COUNTY.

The annual meeting of the St. Clair County Medical Society was held at Priester's Park on Thursday afternoon, April 5, Dr. W. E. Wiatt. President, in the chair; Dr. Geo. E. Hilgard, corresponding secretary; Dr. C. W. Lillie, recording secretary pro tem; Dr. J. W. Rendleman, treasurer. The following members were present: Drs. James Sloey, A. B. Gunn, J. G. Massie, J. L. Wiggins, W. C. Spannagel, H. Hanson, H. G. Hertel, Hugo Wangelin, J. A. Grimes, James W. Twitchell, H. C. Fairbrother, C. H. Starkel, E. H. Little, Walter Wilhelmj, Carroll Smith, and Dr. H. A. Beedle, guest of the society. The report of the treasurer showed 55 members in good standing, nine who were delinquent, and six who had

left the county; the total receipts for the year were \$189.77; the total disbursements were \$117.05, leaving a balance on hand of \$72.72. On motion the report was accepted.

The president appointed as a committee to nominate officers for the ensuing

years, Dr. A. B. Gunn, James Sloey and J. G. Massie.

On motion it was decided to place the society's "Surgical History of the War of the Rebellion" in the public library of Belleville. On motion of Dr. Rendleman it was agreed that any member coming into the society after April shall pay dues only to the end of the fiscal year. Applications of Dr. H. A. Beedle of East St. Louis and Edward H. Lane of French Village were presented, and on being reported favorably by the board of censors, the rules were suspended and both were elected by acclamation. On motion Dr. Lillie was appointed a special committee to increase the membership of the society. On motion Drs. Wiggins, Lillie and Starkel were appointed a committee to provide for a meeting place.

The nominating committee made a report recommending Dr. Hugo Wangelin for president; Dr. J. W. Rendleman, vice-president; Dr. James W. Twitchell of Belleville, corresponding secretary; Dr. C. W. Lillie of East St. Louis, recording secretary; Dr. A. E. Hansing of East St. Louis, treasurer. On motion the report was received and the several candidates declared unanimously elected. On motion, Dr. C. W. Lillie was elected delegate to the

state society, with Dr. W. E. Wiatt alternate.

The president appointed Drs. W. E. Wiatt, A. B. Gunn and J. G. Massie as members of the Board of Censors.

The corresponding secretary presented bills amounting to \$3.15, which were allowed and ordered paid.

On motion, a committee consisting of Drs. J. L. Wiggins, Walter Wilhelmj and Carroll Smith was appointed to draft suitable resolutions regarding the pure food and drug bill. The committee offered the following resolutions, which were unanimously adopted:

Whereas, The St. Clair County Medical Society, and each member thereof, looks upon the adulteration of any food or drug as a fraudulent act; and,

Whereas, The addition of preservatives to foods is often harmful; and,

Whereas, The best interest of the consumer will be served only by branding foods and drugs according to the actual contents of the package; therefore, be it

Resolved, That the St. Clair County Medical Society urges the representative to congress from this district to use his best efforts for the passage of the "Pure Food and Drug Bill," now in the house of representatives; and that we deplore any attempt to weaken the strength of the bill by any amendment providing for a special commission to be appointed at the request of the manufacturers; and, be it further

Resolved, That we believe the bureau of chemistry of the department of agriculture fully competent to determine the qualities of food and drugs, and that any expert aid can be secured through this bureau as well as through a special commission.

C. W. LILLIE, Recording Secretary.

SANGAMON COUNTY.

The regular monthly meeting of the Sangamon County Medical Society was held in the Lincoln Library Monday evening, April 9, 1906. Twenty members were present. After the reading of the minutes of the previous meeting the applications of Drs. Allen and Lockwood of Virden were read and referred to the Board of Censors. The revised Constitution, which had been laid over at the previous meeting, was then taken up and adopted as a whole, excepting Article III of the Constitution and Sections 1 and 2 of Chapter I of the By-Laws. These exceptions were on the point of eligibility to membership. The much mooted question of "open or closed gate" was discussed at considerable length, and Dr. L.C. Taylor moved the adoption of Article III, which read as follows: "Eligibility.—Every legally registered physician residing and practicing in Sangamon County, who is of good moral and professional standing, and who does not support or

practice, or claim to practice, any sectarian or exclusive system of medicine, shall be eligible to membership." The motion was lost. A motion by Dr. Langdon to substitute the following article prevailed: "Every physician who is a graduate from a regular medical college, who is a resident of Sangamon County or state of Illinois, and is of good moral and professional standing, and is licensed by the State Board of Health of this state to practice medicine, shall be eligible to membership." It was then unanimously agreed to amend the By-Laws to conform to the Constitution. Article IX of the Constitution, which pertains to amendments, was amended to read as follows: "The society may amend any article of this Constitution at any regular meeting of its members, by a two-thirds vote, provided that 20 per cent. of the members are present, and provided that such amendment or amendments are not in conflict with the laws and regulations of the state society; provided also that such amendment shall have been read in open session at a previous regular meeting and shall have been sent by mail to each member ten days in advance of the meeting at which final action is taken."

A communication from the committee of the Children's Hospital Society of Chicago was read, in which it was stated that another effort will be made at the next legislature to secure an appropriation to found a state colony for epileptics. It was requested that this society furnish the committee with information concerning the number of epileptics in this county. The secretary was instructed to furnish such information, and a committee will be appointed later in accordance

with the request.

On suggestion of Dr. Kreider the chair appointed a committee to look after the society's interest in the way of a library. The chair named Drs. Patton, Monroe, Kreider, Castle and Trapp. The business of the meeting covering the entire time, it was voted to have Dr. Brittin's paper at the next meeting. The meeting closed in order.

R. D. Berry, President.

C. R. SPICER, Secretary and Treasurer.

VERMILION COUNTY.

The Vermilion County Medical Society met April 9, 1906, in the City Hall. Minutes of the March meeting adopted. A special committee reported that they had succeeded in drafting an ordinance and having it passed by the city council. This ordinance provides for the proper killing, dressing and preparing for the local market of all fish, game or fowl. The Board of Censors reported favorably on the names of Geo. Steeley of Danville and L. B. Russel of Hoopeston, followed by their election to membership. The paper on "Ophthalmia Neonatorum" not being available, a discussion on the subject was opened by E. E. Clark, followed by others. The paper on "Asthenopia," by B. I. Poland, was well prepared and of particular interest to the general practitioner. Discussion opened by I. E. Huston and others, closed by the essayist. E. E. Clark made a motion that the chair appoint a committee to devise some plan by which the nucleus of a library may be started, which was seconded and carried. Adjourned.

E. E. CLARK, Secretary.

NEWS OF THE STATE

Smallpox is reported at Rushville and Bonton.

Dr. and Mrs. Lester Curtis sailed for Europe April 14.

Dr. R. D. Dugan, of Illiopolis, has located in Galesburg.

Dr. S. A. Allen has moved from Chicago to Rock Falls.

Cases of smallpox are reported as present in a factory at Freeport.

Dr. T. C. Brooks, of St. Joseph, is taking a postgraduate course in Chicago.

Dr. and Mrs. C. Pruyn Stringfield, of Chicago, are taking a trip to Mexico.

Dr. and Mrs. H. E. Johnson, of Fairbury, have returned from a winter spent in Florida.

Dr. Max Reichmann has been appointed radiographer to the Alexian Brothers' Hospital.

Dr. and Mrs. William R. Parkes, of Evanston, are visiting in Los Angeles, California.

Dr. J. P. Campbell, of Winchester, has gone to Florida in the hope of regaining his health.

Four cases of scarlet fever were reported from the Chicago Parental School early in April.

Drs. Beede and Walls, of the Illinois Eastern Hospital for the Insane at Kankakee, resigned on April 5.

Dr. J. T. Kessinger has removed from Donnelson to Herrin and has formed a partnership with Dr. Dent, of that place.

Dr. George A. Wash, of Palmyra, was operated on for appendicitis at St. Anthony's Hospital, St. Louis, on April 7.

A. Monaco, a druggist on Clark street, Chicago, has been fined \$100.00 for selling cocain without a physician's prescription.

The Illinois Central Railroad has declared a quarantine at Christopher, where an epidemic of smallpox is said to prevail.

Dr. William J. Huff, of Mode, has been adjudged insane and sent to the Illinois Central Hospital for the Insane at Jacksonville.

Dr. Henry Gradle, of Chicago, is spending three months in Europe. Dr. Gradle expects to attend the International Medical Congress at Lisbon.

Dr. Theodore A. Johnson, of Xenia, was assaulted by Henry Baker, who had applied for a pension and whose petition Dr. Johnson would not endorse

Dr. Hugh T. Patrick has gone to Lisbon as one of the delegates from the Northwestern University Medical School to the International Medical Congress. Dr. I. A. Bouffleur, who is visiting in California, delivered an address before the Long Beach Medical Society on "Drainage, Surgical and Medical," on March 28.

The Evanston Hospital has completed plans for an addition to be known as the Elizabeth Williams Maternity Hospital. The building will cost \$25,000 and will be three stories in height.

- S. D. Haury, a member of the senior class at Northwestern University Medical School, who had just been appointed interne at St. Francis Hospital, Wichita, Kansas, died suddenly in Chicago, from brain disease, March 18.
- Dr. S. M. Wylie, of Paxton. sailed, the first of April, for Lisbon to attend the International Medical Congress. Dr. Wylie expects to spend a few weeks in London, returning about the middle of June.

Twelve applicants took the examinations for nurses and chief nurses in the State Charitable Institution, which were held March 29 by the Illinois Civil Service Commission in Chicago and at the Illinois Hospital for the Incurable Insane at Bartonville.

The following officers were elected at the annual meeting of the Rush Medical College Alumni Section of the Alpha Omega Alpha Fraternity: President, Dr. C. H. McKenns; vice-president, Dr. R. L. Sensenick; secretary, Dr. W. J. Swift; treasurer, Dr. L. A. Beaton.

Dr. John W. Tope, of Oak Park, and a Roman Catholic Sisterhood have been granted a permit by the local village board to erect a hospital in Wisconsin avenue, south of Madison street. The building will cost \$100,000. This action puts an end to a strife which has been carried on for almost three years.

Dr. Hannah S. Sparrow, of Chicago, was attacked by a hold-up man recently who endeavored to rob her as she was returning from a series of calls in a tenement-house district. The doctor's cries for help attracted the attention of passengers on an electric car which was passing and saved her from injury.

Two cases of smallpox have been discovered in the Brown School, Chicago. It is reported that several hundred children who have not been properly vaccinated have been attending the school through false vaccination certificates signed by local physicians. The department of health is investigating the matter.

The Chicago Health Department reports the total number of deaths during March as 2,463, an annual death rate of 14.14 per thousand. The mortality for the first three months of 1906 was at the annual rate of 14.32 per thousand, a decrease of 6.1 as compared with the same period in 1905.

The Effingham County Medical Society held a memorial meeting for the late president, Dr. Sumner Clark, whose death was noted in the March number of The Journal. Each member of the society present made a short address regarding his acquaintance with Dr. Clark. Resolutions were adopted and a copy sent to the family of the deceased president. The Brainard District Medical Society held its thirtieth annual meeting in Lincoln April 13. Dr. William E. Guthrie, of Bloomington, was elected president. Dr. J. N. McCormack, Chairman of the Committee on Medical Organization of the American Medical Association, delivered the principal address. The next meeting will be held at Clinton.

The Peoria City Council has passed an ordinance providing for the registration, disinfection and placarding of premises occupied by consumptives. This action was brought about by the efforts of the Peoria Association for the Prevention of Tuberculosis. The Council also appropriated \$50 a month for a tuberculosis nurse, who began work April 12.

Dr. Nicholas Senn, of Chicago, left on April 4 for Lisbon, where he will deliver the oration on surgery before the International Medical Congress. Dr. Senn intends to go from Lisbon, by way of the Mediterranean, the Suez Canal and the Red Sea, to Beira, Africa, then across country to Buluwayo, from there to the Victoria Falls on the Zambesi River, thence to Cape Town, where he will take the steamer for England.

The first case of smallpox to be discovered in Chicago for a number of weeks was found, on April 6, in the case of John Miller, who recently arrived in the city from New Orleans. He was sent to the Isolation Hospital. Dr. Heman Spaulding, Chief Medical Inspector of the Chicago Department of Health, says that Chicago is now so well vaccinated that the only eases found are those brought in from other cities.

Dr. C. W. Lillie, of East St. Louis, who for the last eleven years has been secretary of the faculty and professor of the Principles and Practice of Medicine of the St. Louis College of Physicians and Surgeons, has resigned his chair, to take effect at the close of the present session. Dr. Lillie will devote himself to the treatment of tuberculosis and the general improvement of sanitary conditions in East St. Louis.

The Cook County Board is having difficulty in making the appointments for internes to the Cook County Hospital. A year ago last Deeember an apportionment was arranged by which graduates of regular medical schools were to have twenty-two interneships; homeopaths, five, and eclectics, five per year. When the results of the examination were announced, it was found that the thirty-two applicants who ranked the highest were all graduates of regular schools; that only three eclectics were on the cligible list, and that no homeopaths had qualified. It is proposed, for this year, to make the homeopath and eclectic appointments under the six months' clause of the Civil Scrvice Act.

James F. Ferdon, whose performances, under the name of Brother Paul, or the "Great Paul," as an itinerant healer and vender of drugs, have been noticed in previous issues of The Journal, was arrested April 6, at Chicago, through the efforts of the Illinois State Board of Health and taken to Freeport, where he was confined in the county jail. His imprisonment is due to prosecution and judgments obtained against him by the State Board of Health for violation of the statutes of Freeport in August, 1905, the fines amounting to about \$1,700. Following the prosecution, Ferdon left the state and has been doing business since

that time in several western states. He returned to Chicago in April and was making plans to resume his business at Rockford when the state's attorney of Stephenson County learned of his whereabouts and procured his arrest.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of April, the following members of the Illinois State Medical Society became members of the American Medical Association:

Bigelow, Frederick Egbert, Chicago.
Capel, A. B., Shawneetown.
Clark, J. A., Chicago.
Dawson, J. A., Chicago.
Diamond, I. B., Chicago.
Fleming, James L., Chicago.
Giles, W. N. Wataga.
Harms, Henry, Chicago.
Higgins, S. G., Chicago.
Holmes, Albert G. H., Chicago.
Laftry, T. D., Chicago.
Learned, Clare Sumner, Chicago.
MacDonald, J. W., Aurora.
McGann, M. E., Joliet.

Malbridge, L. P., Decatur.
Maschek, F. J., Chicago.
Mendoza, A. H. De, Chicago.
Nelson, Bernard, Chicago.
Pattison, H. A., Benld.
Reis, Henry, Jr., Belleville.
Schussler, H. K., Chicago.
Sherman, P., Shawnectown.
Simpson, J., Morrisonville.
Strauch, A., Chicago.
Tuite, John E., Rockford.
Welfeld, J., Chicago.
Welton, C. B., Peoria.
Willingham, R. H., Elizabethtown.

MARRIAGES.

Lester Curtis, M.D., to Mrs. Mary B. Hibbard, both of Chicago, April 11.

WALTER W. OVERFIELD, M.D., Forreston, to Miss Grace Knepper, of Rockford, March 20.

DEATHS.

HARRY McKennan, M.D., a graduate of the University of Michigan, 1889, member of the Edgar County and Illinois State Medical Society, secretary and treasurer of the Æsculapian Society of the Wabash Valley, died at his home in Paris, March 30, of pneumonia.

MEDICAL EDUCATION AND SCHOOLS.

Editor Illinois State Medical Journal.

The Journal of December contains an editorial regarding the diminution of medical students in attendance at our medical schools. O what a blessing! Please permit just a few words more in addition to

your own.

Things medical in this country are certainly not yet what they should be. We have advanced, but there is much more room for improvement. First, we should have a fixed uniformity of preliminary educational requirements. Second, we should have uniformity in our medical schools. We need less quantity and more quality. Things medical should be taken still more seriously. Let us have less, but better men and institutions. It must occur to any one that in such countries as Germany, Switzerland. France and Austria, where medicine is at its best, different conditions obtain. There we find no competition of quantity, but of quality, and the ranks are well filled at that. In Berlin, Vienna, Paris and Berne we find but one medical school, not under private, but under government control. There is no reason why our best medical teachers could not and should not unite to form but one school in one community. This would

be a healthy step to better things. We need it; let us have it.

The conscience of the medical profession must be appealed to wake up to a new and better organization of things medical in this country, to entertain and maintain a higher and more stable standard of medical men to be committed to the study and practice of the sciences and arts of medicine and surgery. Be it suggested that as long as we have no representation in the national presidential cabinet that the American Medical Association, in conjunction with the medical societies of the different states, come to a mutual understanding of willingness to reorganize medicine on a higher and uniform basis. This reorganization should be directed toward making such laws in this country as will regulate the granting and revoking of charters to medical schools, subject to the approval of our national and state medical associations and societies; to meet and stimulate only healthy demand of such institutions of a uniform and high character, allowing only one medical school at any one place and only a necessary number in any one state. Also to regulate preliminary requirements and our state board of examination and registration, so that there can be only efficient and fair admission into the ranks of medicine without discriminations. Quality commands respect; quantity does not. In this country medicine was organized by private hands, all of whom had an ulterior ax to grind. This has brought an unhealthy state of things medical. There have been too many men in the medical college business; not for the good at large, but for the mistaken good of themselves. This is to be regretted. It has demoralized medicine and held back its advancement. We need to heed our errors and look for better things. The way things stand, medicine is not an inviting field of labor, to win bread. We need honest medicine, and relegate the theme of bluff and bluster. Let us have better things.

Yours for better things,

Chicago.

ROBERT PETER, M.D.

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ORIGINAL ARTICLES

THE DYNAMIC FORCE OF DRUGS.*
ERNEST HUGH FITZPATRICK, L.R.C.P., Ed.
PONTLAC.

Wonderful and startling have been the scientific discoveries of the last two decades, bringing about, as it were, an era of the realization of the unreal. Take, for instance, those four great discoveries—the Roentgen ray, radium, wireless telegraphy, and antitoxin. The present-day scientist awaits with eagerness the next miraculous move in the onward march of the human intellect in the limitless fields of wisdom and knowledge. He is eagerly awaiting some discovery that will open new fields for research and new vistas for intellectual speculation. Bacon, Locke, Descartes, Laplace, Newton, Agassiz, and more recently Darwin, Tyndale, Huxley and Spencer have made their impressions on the human intellect, yet these thinkers and writers have passed into the great beyond, doubting much and leaving myriads of human minds in like perplexity and doubt. None of these scientists has given us as yet any plausible explanation or theory of the influence of mind over matter. We are still groping in the dark, and the almost universal present-day yearning after this solution has given birth to numberless "isms," and man's intellect has become the plaything for numerous fakers, mountebanks and quacksalvers, who find in this general intensity of intellectual expectancy a ready market for the sale of their bogus wares.

To the well-poised, scientific mind, the birth and propagation of these various and vicious "isms" come as a painful shock, and yet what better has the scientist to offer? He is hopelessly floundering in the sea of mystery, out of which he seems helpless to steer his intellectual barque.

In considering the dynamic force of drugs I shall begin by taking such a drug as strychnin. Its action is mainly on the nervous system, the brain, spinal cord and nerves. Its therapeutical effects on diseased bodies may be simply stated as being of a tonic nature on the nervous system primarily, and having also, by its action on the nervous system, a stimulating and tonic effect on all muscular tissues. We can see at a

^{*} Read before Livingstone County Medical Society, Pontiac, April 19, 1906.

glance how crude, imperfect and unscientific is our knowledge of this drug. We say that strychnin acts on the nervous system in the same offhand manner that the painter would advise the painting of a house in order to preserve its timbers from destruction by the elements, but the advantage is with the painter, because we readily grasp the significance and wisdom of his advice, but with the action of strychnin is there any one of us who can give an intellectual explanation of the "modus operandi" of a dose of strychnin on the brain and spinal cord and the nervous system generally? These same remarks are applicable to the action of all those drugs that have a special effect on the nervous system; all drugs included in the groups, analgesic, narcotic and hypnotic; drugs which we daily prescribe for our patients. We employ these remedies empirically and have not the slightest knowledge how they produce their effects. nor is this surprising, for the scientific world has hitherto been searching in the wrong direction; nor will it ever be possible to explain the effects of these drugs except on strongly speculative hypotheses.

We attribute extraordinary effects to these drugs and consider and believe that they actually possess some subtle virtue to bring about the desired effects; in other words, that they originate, *de novo*, certain physiologic alterations and that these alterations are the causes whereby these drugs possess the properties attributed to them. Thus, we say that we prescribe morphin, chloral hydrate, bromid of potash, sulfonal, etc., and that we procure sleep for our patients; or that we give strychnin, phosphorus, etc., and that we bring about nervous and muscular tonicity. This is doubtless true in so far as effects and results go.

Are we able to determine how these results are brought about? We certainly are not. We know that nervous and muscular tonicity and sleep are natural conditions in a healthy body and require neither strychnin nor hypnotics. The question is, Where did this natural tonicity of nerve and muscle and this natural tendency to sleep arise? Is it inherent in the body? It appears natural for all animal nature to sleep; that is to say, to go into a temporary state of suspended consciousness and animation. We give an opiate to produce sleep; that is, we try to bring about artificially what ought to be a natural condition. May not sleep be something that lies outside of the body altogether, a condition like light and heat, and that the body only harmonizes with this somnambulistic condition when the brain cells and their electrons are in certain corelations to it? The truth will ultimately be found, I believe, in considering all force as external to man; that man in himself, or any living thing, for that matter, has no force except that which he can absorb from those numberless and mysterious forces that surround him, forces that have through the long cycle of creation been responsible for bringing him into existence.

I consider man but a microcosm of the universe; that is to say, that he is in himself but a minute counterpart of the whole immensity of the universe and of all forces that exist therein; in other words, there is no force in the whole immensity of Nature that does not find its counterpart in the microcosm we call man. Man is the highest conscious form of

once unconscious matter, although his apothegm is somewhat misleading, as there is no matter in Nature that is absolutely unconscious; consciousness is, therefore, only a relative term; more correctly can we say that, as far as our own consciousness goes, man appears to be the ne plus ultra of the whole immensity and of all the forces of the universe. Man being, therefore, a microcosm of the universe, he is acted on and influenced by all forces and, more than this, by all conditions of the universe. We might with truth say that man is but the plaything of all the forces of Nature and that he possesses nothing that he does not borrow, directly or indirectly, from Nature. He is great Nature's pet child. The nourishment of his body is directly dependent on chemical laws. His mental attainments are also dependent on forces existing outside of himself. Although he appears to be endowed with a certain autonomy, his strength as well as his sleep are borrowed from Nature's great workshop. His very appetites and passions are also borrowed from the same source. There is nothing that really exists within himself. He is but the machine exquisitely fashioned so as to attract and condense Nature's forces. He is capable, in a limited sense, of storing some of these forces. His five senses are simply media through which many of the forces of Nature are made to reach the machine. They also play a superlative part in preserving and educating this machine for the play of those eternal forces; his senses are, as it were, the points of contact of his machine with those forces.

Let me further elucidate. Let us take a good stout horse which will draw many miles a wagonload surpassing him many times in weight. Whence does the strength come to the horse? From his muscles, is the ready answer, but sever the nerves that control those muscles, thus destroving communication between muscles and brain, we see at once that the muscles become limp and useless. In other words, the horse has lost his strength, hence it can not be the muscles of the horse that have power and strength, the muscles are but store houses for another power and nerves are but the channels along which that power is transmitted from the brain to muscle. Let us next find the specific centers in the horse's brain that control the power of locomotion. These centers we know are small and circumscribed. We leave the nerves intact and destroy these centers and the horse immediately becomes powerless, he becomes paralyzed; from this it would appear that these centers in the brain supply the power in the horse's muscles. Is this so? Does it not seem somewhat unreasonable to suppose that these small foci of brain matter create such an immense force from within? Is it not more reasonable to consider these brain foci as simply media for condensing external forces which are passed on to the muscles through the channels of the nerves? The larger the muscle, the finer its texture, the greater store house does it become and the greater force it can exert.

One thing we know, and that is that when nerve interruption takes place between muscle and brain the loss of muscular power is instantaneous, showing that force is continually being condensed by these brain centers and is continually supplied to the muscles. Man, as well as animal and vegetable life, must be considered not only as a product, but as an integral part of the whole immensity of the universe, and that Nature's pulse beats in unison throughout the whole. Life is but the tangible expression of the forces of Nature. A mistake has been made hitherto by considering life as but the product of the forces of Nature. I shall use the word "Nature" hereafter, as implying the whole immensity of matter, of force and of the condition of the universe, a term more easily expressed and more readily understood. The processes of conception, gestation, birth, life and death are but manifestations of Nature's forces in a differentiated form. When man dies, these differentiated forces pass on to join in that totality of the eternal economy of the universe, the design of which is unknown to us. Nothing is, therefore, lost to the totality of these forces by the death of the living entity. All that takes place is that the concentration, differentiation, and condensation of Nature's forces cease at a given point.

Man is, as far as we know, the highest and most perfect machine equipped for the differentiation, condensation, and storage of Nature's forces. We will pass on now to consider the effects of narcotics and hypnotics on this human machine of ours. We say roughly that opium brings about a congestion of the brain and sleep is thus induced, but how crude is this explanation; let us further ask why should a determination of blood to the brain induce sleep,—the answer we can not tell. all that we know is that it does so. What is sleep? Roughly answered, sleep is Nature's forces in repose for the sake of repair. May not sleep be something in Nature counterparting itself, if I may be permitted to coin such an expression, in its microcosm man? In other words is sleep the counterpart in man of something already existing in Nature?

Let us consider a moment. "The mass of all visible stars in the greatest telescope is so small in comparison with the sum total of matter in existence that it may be almost neglected. The greatest bulk of matter does not emit light. The universe as a whole is almost dead. Photographs of the entire celestial vault reveal about one hundred millions of stars or suns. Mathematicians tell us that there is enough matter in existence, which is apparently dead, to make thirty-two thousand millions of suns like ours. So that of the immense quantity of matter existing, only a minute fraction of it is visible, as stars and heavenly bodies. The bulk of matter is quiescent and dead. It may be possible that there are billions of exhausted suns and moons and planets wandering in the waste spaces of space."

If this immense proportion of the universe is dead and quiescent, this quiescent part must have its counterpart in the microcosm man, as well as those parts which are not quiescent, otherwise, man can not be justly esteemed to be a true microcosm of the universe, hence, this quiescent part is represented or counterparted in man as sleep.

All that hynoptics do, therefore, is to place the atoms that go to make up the brain cells of certain specific areas of the brain, in such relationship or juxtaposition to the quiescent parts or conditions in Nature, so that the microcosm becomes harmonized with this bulk of quiescent

matter, and that which we call sleep is induced or produced. Consider for a moment those myriads of atoms, all so intelligently arranged and see if we can not reconcile their relationship to the external forces of Nature, by finding an analogy in the human economy.

Take the spermatozoa, virile living bodies of one two-thousand-five-hundredths of an inch in diameter, each one a perfect microcosm of the male himself, each one with its millions upon millions of atoms so infinitely small as to be incomprehensible to the human mind and yet so intelligently arranged and accurately adjusted and with such wonderful potentialities that it will produce when placed under suitable environments and conditions, a striking counterpart of the human being from which it sprang. If this be true of spermatozoa, which nobody will be disposed to deny, why should not the cells of the gray matter of the brain with their myriads of atoms, possess likewise almost infinite properties and potentialities and have the power of so arranging their atoms as to form an intimate relationship with the forces of Nature?

Thus, there may exist in health a normal relationship existing between the brain cell atoms and these forces. The normal function of these brain cell atoms may be considered to be the condensing of these external forces, thus contributing to the life and well being of the complete microcosm man. In disease this subtle relationship and balance is disturbed and all that drugs do is to restore this fine balance and relationship, therefore there must exist in the drug itself some inscrutable and hidden force which, when coming in contact with brain cell atoms, have the property of so adjusting their atoms with the forces of Nature, as to produce a condensation of those forces.

"The new theory of matter now being exploited may be ealled the 'Astronomy of Atoms,' so that what has been regarded as a brain cell is not merely composed of millions of atoms, but these atoms are composed each one in its turn of myriads of infinitely smaller things called electrons, which revolve around one another in the perimeter of an atom, in paths resembling the orbit of the earth and other planets that go to make up the solar system. And that instead of being packed closely the revolving electrons have in proportion as wide a latitude for movement in an atom as there is free space existing between Mars, Jupiter, Saturn, etc.

"The manner in which the electrons which constitute an atom revolve about one another resembles the manner in which the planets travel in their concentric and goes to show that the principles perfected by Newton, Laplace, etc., to account for the motions of the heavenly bodies, may explain also the motions of those infinitesimal electrons of which atoms are composed." Thus a brain cell may be considered to be a counterpart of the universe, and a brain cell atom a counterpart of the solar system, and electrons a counterpart of the planets.

Thus we can comprehend the subtle relationship existing between mind and matter. Thus there is a frontier established in those infinitesimal atomic subdivisions, a frontier where mind and matter meet, or in other words a frontier where the eternal forces of Nature are brought into sympathy with the microcosm man.

I have only alluded to those drugs which are considered as having a special action on the nervous system. Many drugs have a mere chemical or a mere mechanical action, like some purgatives, and some of the mineral and vegetable astringents. Why should the taking of a bitter tonic like gentian increase the appetite for food? We can readily explain why taking salt induces thirst, this effect is produced solely through physical and chemical causes.

Why should ammonia and brandy stimulate the heart to action? But the effects of these drugs may be explainable upon the brain cell atomic relationship hypothesis. Some drugs are blood foods, like iron. So we may go through the whole pharmacopeia and recount the effects of all the different drugs upon the human system, some we can explain, as we have said mechanically, some chemically, and some upon the brain cell atomic relationship theory just laid down, and some we can not explain at all. May not drugs that aid digestion, assimilation, nutrition and elimination restore altered brain cell relationship and this being restored, normal conditions of the body are restored?

We can readily understand that when deleterious matter is circulated in the blood, deleterious matter derived from the results of impaired digestion, or impaired assimilation, or impaired elimination, the deleterious matter, for example, seen in cases of renal insufficiency, that these deleterious products have an injurious action upon the brain cell atoms and their electrons and alter their fixed relationship to the external forces of Nature, thus, further, morbid conditions arise as a result of this altered relationship. The spinal cord, the nervous system, including the sympathetic nervous system, are but extensions and modifications of brain matter, but the brain cell atoms and their electrons to a superlative degree govern and control the relationship existing between the microcosm man and the forces of Nature. We know that when the continuity of a nerve is completely destroyed the distal parts supplied by that nerve lose both sensation and mobility, hence we draw the inference that the relationship of nerve cell atoms and their electrons with the forces of Nature must be through the medium of brain cell atoms; nerve cell atoms seem apparently unable to act independently and their normal function appears to depend on the integrity of their connection with the brain cell atoms.

We are thus lead to the consideration of pain, its causes and why it is that there are certain drugs which will relieve pain either locally or generally. Let us go back a little and dwell upon the relationship existing between the microcosm man and his five senses, sight, hearing, smell, tastc and feeling, which senses, as we have said, are but the points of contact of the microcosm man with the eternal forces of the universe, but we must not forget that the myriads of atoms and their electrons that enter into the composition of the brain cells are the chief and the supreme points of contact of the microcosm with these forces.

Pain is mainly connected with one of these senses, namely, that of touch or feeling. Pain may be described as a partial interruption in the continuity of nerve and brain matter. The forces which are constantly being condensed and transmitted by the brain cell atoms and their elec-

trons along the nerve channels to all parts of the body, when meeting with an interruption at any stated point, owing to the loss of continuity of nerve substance, there takes place at that specific point, a sudden effort on the part of these forces to escape, and this violent escaping of force we call pain.

Thus when an analgesic or pain-easing drug is given, the drug appears to possess the property of either restoring to some extent the disturbed relationship of nerve cell atoms and their electrons at the point of impairment, or it may act primarily on the brain cell atoms and their electrons and lessen the condensation of force, and thus diminish the volume of force transmitted along the nerve channels, so that if there is less force to escape there is less pain. Local anesthesia, produced by the application of certain drugs like cocain to specified localities, may be explained upon the hypothesis that these drugs possess a certain property of so altering enried cell and brain cell atomic relationship that their continuity is absolutely destroyed for the time being.

General anesthesia, by the inhalation of ether or chloroform, may be explained on the hypothesis, that these drugs when brought in contact with brain cell atoms and their electrons possess the peculiar property of completely arresting the condensation of force by these atoms. The skin being abundantly supplied with nerve endings is extremely sensitive to thermal and other changes. The sense of touch is one of our most delicate senses. Any loss of continuity of skin must necessarily include a loss of continuity of nerve cell atoms, and hence, an interruption of the transmission of force condensed by the brain cell atoms and their electrons and the effort of that force to escape at the point of impairment, results in pain.

Let us pass on to those drugs known to us by the name aphrodisiac. There are quite a few of these. How do they act? We are taught that the sexual center is seated in the lumbar region of the spinal cord. Do these drugs actually generate sexual power? Or is their primary action upon the brain cell atoms? causing the atoms and their electrons to condense the external forces, which forces are passed along the spinal cord and are stored at certain centers there. I am strongly inclined to this last theory, that the sexual force, like all other forces, lies outside the body and that it is a force that is condensed by the brain cell atoms and their electrons, differentiated by them and passed on to the spinal cord to be there stored in centers. It is a force upon which depends the perpetuation of all life upon the earth, paradoxically, it may be called a force which, while binding the living to the dead, it at the same time, marks the point of cleavage from dead and living.

It is a force that is universal in all living matter, animal and vegetable alike. In the matter of plants there must exist within them certain cell atoms that condense and differentiate the eternal forces, storing them in the ovule and pollen and finally in the seed in much the same way that the brain cell atoms and their electrons of the human male and female condense and differentiate this force, storing it in the male as spermatozoa and in the female as ova. How subtle, indeed, must be the processes of condensation, differentiation, and storage of these forces, we can readily

see when we consider that the spermatozoa are but microcosma of the whole being of man, and the ova are but microcosms of the whole being of

woman. The same remarks apply to plants and their seeds.

It is interesting to note that in that form of life which has no locomotion, or very little of it, such as plant life and the lower animal life, that sexual contact is for the most part involuntary, depending upon the movements of the air, of insects, birds and even water and other accidental causes. Some lower forms of animal life are bisexual, but with the higher forms where tocomotion is extended, the sexual contact becomes voluntary and controllable and more highly organized and complex. With birds and fishes, which have a wide area of locomotion, the sexual instinct appears to be more pronounced than with those animals that have but a limited area.

With man, who has the widest area of locomotion and who is so constituted as to be able to move and live anywhere and everywhere on the face of the globe, in the Arctic as well as the Equatorial regions, the sexual predisposition is the strongest of all, but far more complex and better under control than in all other species of animal life. This leads us to consider what we term fixed habits of mind. But fixed habits of mind are the product of forces acting along certain well-defined lines; these forces, by frequent repetition, cause the brain cell atoms and their electrons to assume stable relationships; such a force may be termed hereditary predisposition, dispositions already existing in or capable of being produced from those microcosms, the spermatozoa and the ova; these forces are fundamental with life and result in the power of the living organism to become conscious of its environment.

This continued consciousness of environment produces in turn fixed habits of mind. There is nothing that actually exists de novo in the microcosm man except these fundamental tendencies derived from the spermatozoa and the ova. all that he is capable of is to condense, differentiate and store within himself the forces of Nature, through the instrumentality of his brain eell atoms and their electrons, powerfully aided by his five senses. Let us take the memory of words and draw a rough analogy between the brain cell atoms of that area of his brain, set apart, as it were, for the memory of words, and an ordinary kaleidoscope. By giving the kaleidoscope a turn a beautiful design is shown, caused by the placing of the pieces of glass in the instrument in certain positions. mathematically correct in every detail. Thus when the atoms and their electrons of a brain cell in the area of the memory of words is influeneed by a certain sound, say, for instance, the French salutation, "Comment vous portez," these atoms assume a definite form or shape, as the expression is repeated over and over again, a certain stable relationship takes place which may never again in this life be disturbed and the remembrance of the expression never lost, the sound of the expression is entirely outside of the microcosm, like all other forces of Nature.

We have all seen the experiment made with glass or metallic discs of various sizes and thicknesses, so made, that when the bow of a violin is drawn across each one of them, each gives forth a different and distinct musical sound. Let us take some fine sand and place some on each of these discs and draw the bow again, now what do we see? On each disc is produced a figure or design mathematically correct in every detail, no two figures being alike; this analogy may aptly be applied to the effect of sound upon the myriads of atoms and their electrons of those cells that go to make up the area assigned to the memory of words and the differentiation of sounds. Thus sounds and languages are learned and remembered.

What is true of one area of the brain is true of all the other areas. The senses of sight, smell, taste, feeling, will likewise produce stable relations of brain cell atoms and their electrons. The brain cell atoms, therefore, have the power of acquiring stable relationships when influenced by the various senses we possess. In other words, the senses are the stimuli by which brain cell atoms and their electrons eondense those forces that act upon the microcosm and these atoms finally assume a permanency of position, which permanency enables the microcosm to become conscious of its environments.

Thus, habits of mind, or to be more explicit, the education of brain cell atoms can be acquired. A drug, say opium, acting repeatedly upon certain brain cell atoms and their electrons, brings about certain stable relations of these atoms, the acquisition of which enables these atoms and their electrons to condense and differentiate the forces of nature, which differentiated forces produce on the microcosm certain definite effects. The opium does not of itself produce these effects upon the microcosm, all the opium does is to bring about changed conditions of certain brain cell atoms and their electrons, which changed conditions produce a condensation and differentiation of the external forces, and it is the effect of this differentiated force, thus produced, that exhibits itself upon the human microcosm, which exhibition of effect we attribute to the opium.

Arguing from this, we can see the value of the proper training of the brain cell, in other words, the brain cell atoms can be educated, thus habits are formed—good or bad.

I do not wish to pass into a polemical discussion, yet it would be pertinent at this juncture to say that I believe in the universality of a spirit of good pervading and influencing all the eternal forces of the universe, and that this spirit is counterparted in the microcosm man, giving man an entity above all other created things and developing within him a conscience and a free will, and by the exercise of these he can so educate the brain cell atoms as to bring the whole microcosm in harmony with the beneficent purposes of this universal spirit of good.

Further, I might add, that if we consider all force, which includes the sexual, as primarily external to man, it is not inconsistent with the logic of my contentions to say that when Nature, through travail, labor and distress, evolved an immaculate being, it was quite within the bounds of possibility for the brain cell atoms and their electrons of this immaculate being to have so condensed within herself such necessary portions of the external forces of Nature, and also to have condensed within herself the universal spirit of good, as to reproduce from her own immaculate body a

being combining within himself all the elements that go to make up the microcosm man, and all the essentials of the external and eternal forces of the universe existing outside the microcosm.

To earry this thought a little farther. Granting, as we must, that the eternal forces, acting on chaos, have been able, through a long cycle of time, to evolve the microcosm man, and through man those microcosm of himself the spermatozoa, it is not beyond reason to infer that those same forces, acting upon and through an immaculate microcosm, that is to say, a microcosm of the very highest development, have been able to evolve a being having both finite and infinite attributes. Thus, it is not very difficult to concede that such a being, condensing within a human frame infinite powers and forces, did perform by the infinitude of those powers and forces such wonders attributed to him, wonders only owing to the limitations of human understanding.

It would not be unprofitable to consider, for a brief moment, the historical and the scientific significance of the spirituality of that period when Christ was born. The Roman world had borrowed and taken to itself the gods of the Greeks, though greatly debasing them by placing them on lower ideals of Dietv. These Romans had conquered all the tribes bordering on the Mediterrenean; these tribes had, after their conquest, gradually abandoned their own religion and their own gods, and had accepted the religion and gods of the Romans; they became, in faet, integral parts of the Roman empire; Greece, who had borrowed her mythology from the Egyptians, but had beautified and embelished it by endowing their gods with all manner of romantie and picturesque human attributes, thus lifting their gods far higher in the seale of diety than that hitherto achieved by man, excepting the Hebrew. The Greeks bad also lost faith in their Gods for a long time past, and their whole system of faith was shaken to its foundation. Socrates, the great teacher and philosopher, was compelled to swallow hemlock, because he expressed his disbelief in the gods of his people. The intellectual mind of Greece revolted against their absurd, although beautiful mythology, and in the course of time the people followed their philosophers. At the birth of Christ the religion of Greece was hopelessly foundering. The Egyptians had sunk to the grossest and vilest form of idolatry, such as the worship of eats and dogs, and all the far East was covered under a dense cloud of heathenism. Within the small compass of Judea, in the land of Palestine. was a remnant of the once powerful nation of the Hebrews, who had been for a long period held in bondage, but had a few generations previously returned to their native land. This remnant of Israel alone had, through these years of captivity in Babylon, and after their return to Palestine, held steadfast in the belief of the one true and only Creator.

The universality of the spirit of good was through the power of natural selection, strongly attracted to the tribes of Judea in the land of Canaan. Every Hebrew maiden and matron lived in the fervent hope that perhaps she might be the one chosen to be the mother of the Messiah. This lead to an exalted and lofty chastity among the women of Judea. It was during this age of exalted ideals of motherhood and God, ideals

which were entertained by the men of the nation as well, producing within them a high and lofty spiritual sense, which was not in any way diminished by the Roman conquest, and it was in the intensity of this circumscribed spiritual atmosphere that the immaculate being was born, destined to become the mother of Christ.

A wonderful galaxy of spiritual-minded men lived during Christ's life and followed closely after him. This intensity of spiritual feeling has never been duplicated and may never be again for aught we know. Those of us who are believers in the theory of evolution and natural selection, can, with interest, trace the spiritual evolution of the Jews all through their remarkable history, their captivity in Babylon, their return again to Judea, and their deep spiritual development at the time Christ was born. To the query, "Why has an immaculate conception occurred only once in the history of man?" the simple, scientific answer to that is, "Nature never duplicates herself." The long epoch in the history of man that evolved the immaculate virgin can never be repeated. There are no parallels in history, each epoch is sui generis. There may exist similarities, but never parallels.

But to proceed. By the brain eell atoms of man, that is by his thoughts, the greatest depths of the universe can be fathomed, his power of appreciating, not necessarily comprehending, space is infinite; space in its widest diffusion, as well as its minutest subdivision; man can appreciate the widest ranges of stars in the firmament and also the infinite smallness of those atoms that go to make up a brain eell or a spermatozoon.

Infinite space, as well as infinite subdivision, may be said to be eounterparted in man, or in other words, infinite space and infinite subdivision find, as it were, a meeting place in him. Is thought a force that has its incipiency exterior to the microcosm? By thought we mean consciousness of knowledge, or of what is. All knowledge is eternal, the same yesterday, to-day and forever. Knowledge may be likened to an ocean, and the brain cell atom and its electrons to a sponge floating in this ocean. The brain cell atom absorbs knowledge in much the same manner that the sponge absorbs water. Brain cell atoms of some are more capable of absorbing knowledge than others, much in the same way that some sponges are more porous than others. Brain cell atoms and their electrons can be made to absorb more knowledge by preparation, much in the same way that a sponge can be made more porous by being put through certain processes of preparation.

When permanency of groups of brain cell atoms and their electrons is brought about and brain cell atomic activity is almost confined to these definite areas, insanity may result. Insanity may be defined as an irregular and disorderly activity of brain cell atoms and their electrons, producing perverted impressions by the senses upon these atoms, and these perverted impressions may, in their turn, cause further irregular and disorderly activities of other brain cell atoms, thus, a species of action and reaction is brought about which may finally result in the complete destruction of whole areas of brain cell atoms, and hopeless insanity ensue.

The intelligent training of the brain cell atoms and their electrons by the senses, is necessary for a healthy balance between these atoms and the external forces of nature and with that knowledge which envelops the whole universe.

Life has been scientifically defined as a consciousness of environment, the greater the consciousness the higher the form of life. It is plainly to be seen that well-educated brain cell atoms tend to extend this consciousness of environment, and, therefore, to the higher development of the microcosm, in other words lead to a higher plane of life.

But there is even a higher form of consciousness than the mere consciousness of environment. There is the eonseiousness of truth, of honor, of justice, of love, a form of conseiousness far more subtle than the mere conseiousness of environment. It is, altogether, a higher form of consciousness. While not attempting in any way to dip into metaphysical controversy, yet, on a purely material basis, we may argue that brain cell atoms and their electrons have been endowed with the property of condensing forces and knowledge from the envelope of force and knowledge that surrounds the microcosm. It is only logic to suppose that the brain cell of the microcosm man is sufficiently developed to absorb the knowledge of God, which is truth, honor, justice, love, etc., which are parts of this envelope of knowledge that surrounds man.

Chemical forces may be rightly considered as another of the many manifestations of the external and eternal forces of Nature. Here is a vast field for speculation and clearly within the range of medical science. In considering man as a microcosm of the universe, we assert that all the forces in the universe have taken some part in his production at some time, hence, all chemical compounds, mineral and vegetable alike, must, to some extent, affect the microcosm, which has been established by these chemical laws. Some chemical compounds affect him beneficially and others detrimentally. These effects are governed by some law, and by some principle laid down during the travail, I may say, of the forces of Nature in their efforts toward producing man.

These effects of drugs we call the dynamic force, a force which has its incipiency in the impenetrable vista of the past, a force, nevertheless, that is closely were in the warp and woof of the inexorable workings of Nature's laws towards the evolution of the microcosm man on this earth. That is to say, the chemical combinations of a drug having played their part in the acons of ages gone by, in developing the complete microcosm, these chemical combinations when given in the form of a drug to man, strive once more to enact their ancient rôle and thus produce in him certain definite results, results that may be altogether dissimilar to their original effects, when assisting Nature in her labor of evolving man. This dynamic force, is, as it were, an atavistic force.

The complexity of the construction of the microcosm presupposes the complexity of the forces of Nature; some of these forces we think we understand, but of the great bulk of them we know nothing. Take maternity for example, that inexplicable force that is evolved in the gestatoric description.

tion of a being, either brute or human, there are undoubtedly unknown forces upon which maternity depends and draws. More especially during the period of gestation, how often is it that a delicate woman, worn with much grief, sorrow, pain and work, will bring forward a virile perfect offspring; and have we not often wondered at an apparently half-starved cat or dog bringing forth a numerous group of healthy progeny? How comes this about? May it not be possible in gestation that there is a certain brain cell relationship established which leads to a condensation of certain forces of Nature, which forces may be powerful factors in assisting Nature toward the fulfillment of maternity—that supreme act of hers? May not hypnotism be a force in Nature unknown to us, and explainable as an indefinite power possessed by some individuals to condense certain forces of Nature, and who further possess the power to pass these forces on to other minds, or speaking more accurately, to other brain cell atoms. The passage, as it were, of force from the brain cell atoms of one to the brain cell atoms of another, producing in the subject a similar attitude that exists in the operator. The stability of these brain cell atoms thus produced causes all other parts of the brain to remain quiescent, and the renewed activity of these other parts is dependent upon the destruction of this stability first established. As long as this stability continues the subject is under control, that is what we call hypnotism.

In dealing with these ideas, theories, or speculations of the activity of brain cell atoms in their relationship to the external forces and harmonizing these theories with the microcosmic theory of man, there is still a further thought that is capable of being extensively exploited, and that thought may be placed in the form of a query. May not the activity of brain cell atoms produce a sort of compound in a region of science yet unknown; some science probably analogous to chemistry, or, perhaps, closely related to it, compounds that may be further acted upon by one or many of the external forces, thereby forming or breaking up, or differentiating into other compounds? Thus the various phases of mental activity may be explained. When we consider the infinite number and the infinite activities of the brain cell atoms and their electrons and the infinite number of forces that act upon those cell atoms we can readily realize the infinite diversification of the thought and activities of the mind of man.

May not the will be established by some subtle relationship existing between those fundamental tendencies and hereditary predispositions derived from those potentialities of the spermatozoa and ova and these brain cell atoms and their electrons, relationships that may be further influenced by the action of the senses? May not decay and death be attributed to the gradual loss of power by the brain cell atoms and their electrons to condense the forces of Nature? Thus, the body of the microcosm becomes starved, as it were, of force, and decay naturally supervenes, as lessened force supply means lessened cell formation, and iessened cell formation implies decay, disease and death.

May not what we call instinct in birds and animals and fishes, seen in a limited extent in plants also, and intuition in man, be attributed to the activities of brain cell atoms and their electrons in that frontier already described, a frontier of infinite atomic subdivision, a frontier where knowledge and force are being constantly absorbed, from those eternal envelopes of knowledge and force that surround the universe and all things therein by these brain cell atoms and their electrons, much in the same manner that a placental villus will absorb oxygen and nutriment from the maternal blood in which it floats, nutriment and oxygen destined to support the growth and life of the fetus, and further that the stimulus given these atoms to absorb this knowledge and force is through the medium of the senses?

May we not, with some justice, be accused of incontinently using the expression "Dynamic Force of Drugs," to cover up a vast amount of ignorance, or to bolster up the pretense and extravagant claims of the extraordinary efficacies of drugs when administered in infinitesimal quantities?

THE SOURCES OF INFECTIOUS AGENTS AND THE WAYS AND MEANS OF INFECTION.

LUDVIG HERTOEN, M.D. CHICAGO.

Prevention of infectious diseases rests on knowledge of their mode of spreading and the more accurate and complete this knowledge the more effective becomes our prevention. At the present time the common, allimportant source of the microbes that cause the human infectious diseases is the sick man or animal from which the microbe may pass to susceptible individuals and start new infections. This transfer of the infectious microbe may be direct or indirect. Indirect transfer may take place through the air, water, milk and other substances; through even healthy human beings, and through animals, particularly various insects. Only a few pathogenic germs lead a regular saprophytic existence. The bacillus of tetanus, of botulismus and of emphysematous gangrene (the gas bacillus of Welch) are inhabitants of the intestinal contents of the larger animals and man and occur in many soils upon which manure is deposited. The tetanus bacillus, however, has hardly any invasive powers, its action being essentially toxic. The gas bacillus and other anaërobic bacteria with pathogenic powers are also essentially saprophytic in their habits and perpetuate themselves without difficulty outside the body.

Aerial Infection.—When infectious micro-organisms reach the external world in the secretions and discharges from the sick, they may be deposited on the ground or floor, on clothing, and on articles of various kinds. So long as drying is not complete, bacteria are not detached by ordinary air currents and direct contact is now practically the only way in which disease may be communicated. In the home, the school room, public conveyances, etc., there is good opportunity for communication of

disease in this manner. There is abundant evidence that the acute exanthematous diseases, wound infections, diphtheria, typhoid fever and other diseases may be carried by infected clothing and other articles. In most of these cases it concerns the conservation of microbes in virulent form, rather than aetual multiplication; cholera and typhoid bacilli may multiply, perhaps, in fecal masses deposited on clothing.

Until a few years ago aerial infection was regarded universally as infection by dust, carrying dried bacteria. Cornet called our notice to the dangers of dried tuberculous sputum. The idea that inhalation of dried sputum is the essential means of transmitting tuberculosis has a strong hold. In 1897, Flügge, in Breslau, began a series of investigations of the air as the carrier of infection, the results of which have shown that air may convey bacteria not only when dry, as dust, but also in fine bubbles or droplets of sputum or moisture. Of these two forms the second is

probably the more important in spreading disease in general.

Dust Infection.—True dust infection requires that the organism in question withstands drying in the air to the extent that it can be whirled about and carried for some distance by the air currents in our houses and other places. Dry bacteria of this kind constitute the real danger in dust infection as now understood. Of course, very strong currents, mechanical disturbances of accumulated matter, "dry dusting," violent shaking and rubbing of handkerchiefs and other contaminated articles may set in motion for a time larger portions containing infectious materials, but these would rapidly settle down, when, it is true, they may cause infection from direct contact, whereas it has been shown that smaller particles of completely dried material may remain suspended for three or four hours. Herein lies one of the chief elements of danger of this mode of infection.

Pathogenic bacteria have been divided with reference to their power to communicate disease when dry as follows (Gotschlich): 1. Bacteria that are not viable in air-dried dust and which consequently can not disseminate disease in dust: cholera vibrio, gonocoeeus, pest and influenza bacillus. The recent work of Wood¹ indicates that the pneumocoecus belongs in this group. 2: Bacteria that withstand drying and may eonvey disease when carried by such air currents as occur in ordinary houses (1 to 4 mm. per second); meningocoecus, pyogenie cocci, bacillus pyocyaneus, tubercle bacillus, tetanus bacillus and anthrax spores. 3. Bacteria that withstand drying, but are disseminated only by such strong currents as rarely occur in houses; diphtheria bacillus, typhoid bacillus. It must be added that material earrying smallpox may be disseminated in the air. English observers lay great stress on the "aerial convection" of smallpox.² In the case of measles and scarlet fever the danger of aerial infection is confined to within a few fect from the patient.

Droplet Infection.—Flügge and his co-workers have demonstrated that, in talking, coughing or succeing, numerous germ-laden bubbles of mucus and saliva pass out into the air, where they may float about for a

^{1.} Jour. Exp. Med., 1905, vii, 592.

^{2.} See Welch and Shamberg, Contagious Diseases, Philadelphia, 1905.

time. The distance to which the droplets, often quite invisible to the naked eye, may pass depends on the force with which they are expelled, on the nature of the air currents, as well as on the size of the droplets. It has been found that, after rinsing the mouth with a solution of B. prodigiosus, droplets containing bacilli may be carried as far as 12.4 meters (Koeniger). On account of the viscid character of their saliva, tuberculous patients rarely throw out droplets farther than 1.5 meters, and this is the limit within which association with coughing consumptives must be regarded as positively dangerous. Laschtschenko and Heyman have shown that tuberculous patients frequently expel in this way droplets laden with virulent bacilli that, on inhalation by guinea-pigs, cause fatal tuberculosis. In connection with droplet infection, it must be noted that relatively strong patients, who walk about, may be just as dangerous as the weak and bedridden, and even more so. On account of the viscid character of tuberculous sputum, the droplets on drying adhere firmly and it seems that mechanical influences are necessary in order to loosen particles from dry drops. Tubercle bacilli may remain alive for 18 days in drops that dry in the dark and for three days in the light.

Numerous pathogenic germs may be disseminated by droplets or bubbles of mucus and saliva, among them most of those that die on drying. It is likely that influenza, pneumonia, diphtheria, whooping cough, measles, scarlet fever and smallpox may be communicated in this way, and perhaps also epidemic meningitis. Mendez de Leon and Alice Hamilton³ have both shown recently that streptococci are expelled to various distances in talking, coughing and even in rapid breathing and undoubtedly operative infections of somewhat obscure origin may be caused in this way. It is also probable that in hospital wards, especially virulent streptococci and pneumococci may be communicated through droplet infection. Schaeffer found that patients with leprous lesions in the mouth and respiratory tract may expel large numbers of lepra bacilli in droplets of mucus.

Aerial infection of whatever character, whether dust or droplet, is most dangerous by far in closed rooms, railway cars, shops. In the open air it is less dangerous because of the unlimited space and the action of sunshine. Cases have been reported, however, of typhoid fever which appeared to develop from dissemination of dust-carrying typhoid bacilli

deposited on the ground in typhoid feces and urine.

Water-borne Infection.—Water plays an essential rôle in the dissemination of typhoid fever, cholera, bacillary and amœbic dysentery. It is only exceptionally, however, that the bacteria in question find such conditions in the water in which they are deposited with discharges from the sick that actual bacterial multiplication takes place. In India, the temperature and amount of vegetable and other materials in the waters of the Ganges enable the cholera spirilla to multiply. In most waters in temperate climates, the bacteria are able to maintain life only for a comparatively short time. It is said, largely as the result of laboratory ex-

^{3.} Jour. Am. Med. Assn., 1905, xliv, p. 1108.

periments, that cholera germs will remain alive in water under "natural conditions" for three months and typhoid bacilli for four weeks. In the experiments of Jordan, Russell and Zeit, in which typhoid bacilli were exposed to canal and river waters in sacks permeable to dissolved substances, the bacilli perished, as a rule, within three to four days. Theoretically, it may be possible that resistant bacterial cells may withstand for a longer period the especially hostile influences of water. Frost, on reinvestigating the antagonism of bacteria to typhoid bacilli, found antagonistic bacteria to be distributed widely in nature, being present in various soils and waters.

The Soil and Infection.—According to Pettenkoffer's theory, the subsoil played an essential part in the dissemination of infectious diseases, but this theory has been abandoned because it has been shown conclusively that pathogenic germs do not reach and can not live in the deeper layers of the soil which normally are sterile. Experimentally, it has been found that typhoid and cholera bacteria may retain their viability for some time when deposited in the superficial layers of the soil. Rullmann⁶ found that typhoid bacilli implanted in sterile sand remained alive at the end of eighteen months when the material had dried completely. Levy and Kayser⁷ have shown that the contents of privy vaults containing typhoid bacilli may be dangerous even after the lapse of months. Anthrax bacilli may live for a long time in the ground where they pass into the spore forms which may infect susceptible animals. The superficial layers of manured soil also harbor pathogenic anaërobic organisms, of which the most important are the tetanus bacillus and the gas bacillus.

Food and Infection.—Various pathogenic bacteria may occur in foods. These bacteria may be derived from the animals supplying meat and milk. Tubercle, anthrax, glanders, paratyphoid bacilli and streptococci are among the most important organisms that may enter the body in this way. Food, especially milk, originally quite pure, is frequently contaminated on its way from the dairy to the consumer. Diphtheria bacilli and the cause of scarlet fever may be disseminated as the result of direct contamination of milk. In other cases, the contamination is more indirect, as, for instance, from the use of infected water in cleansing the utensils, etc., and in this way typhoid, cholera, and dyscntery bacteria may be conveyed by milk. Milk is a peculiarly dangerous medium for conveyance of infection, because it furnishes conditions that are favorable for microbic multiplication. In recent cholera epidemics, especially in the Philippine Islands, the disease was spread through food to a larger extent than by contaminated water. Non-infective but toxicogenic saprophytes may multiply in milk, dairy products, meat and fish, which, when consumed, cause severe, often fatal, forms of acute intoxication (food poisoning, bromato-toxismus). Recently paratyphoid bacilli have been found to play an important rôle in meat poisoning, and in some of these cases the symptoms are typhoid-like; other cases are more acute. Here it appears

^{4.} J. Infect. D., 1904, vol. i, p. 641.

^{5.} Ibid., p. 599.

^{6.} Centralb. f. Bakt., 1905, xxxviii, Original, p. 380.

^{7.} Centralb. f. Bakt., 1903, xxxiv, Original, p. 489.

to concern the meat of cattle infected during life. From Malta it is reported that Malta fever is communicated by the milk of goats that have the disease.

Transmission of Infection by Animals.—Animals may cause human disease in three different ways. In the first place, animals, and especially domestic animals, may suffer from diseases that are directly or indirectly transferable to man, e.g., anthrax, tuberculosis, glanders, pest. In the second place, animals or insects, especially flics, may act as mechanical carriers of germs that are deposited by chance here and there in such a way that contact or food infection of human beings occurs. In the third place, insects, especially mosquitoes, act as intermediary hosts for pathogenic protozoa and organisms of as yet unknown nature, which here pass through developmental cycles, associated with great proliferation in the case of the malarial organisms, and acquire infectious powers, so that they eause disease when deposited again in the tissues of suseeptible persons; this eourse of events is illustrated by malaria and yellow fever. The first discovery of an intermediary host, most likely of this kind, was made by Theobald Smith and Kilbourne, who showed that the parasite (Pirosoma bigeminum) of Texas fever in cattle was transmitted by a tick. Their work paved the way for the demonstration of the rôle that the mosquito for some time had been suspected of playing in malaria and also in vellow fever.

Occurrence of Pathogenic Bacteria on Healthy Human Beings and in the Internal Organs of Healthy Animals.—The skin and the mucous membranes which communicate with the external air, especially the oropharyngeal, nasal and intestinal, constantly harbor bacteria capable of causing disease under suitable conditions. The principal pathogenic bacteria present on the skin and mueous membranes of man are streptococci, staphylococci, pneumococci, diphtheria baeilli, eolon and influenza bacilli and certain pathogenic anaërobes. Streptoeocci of undoubted pathogenic possibilities are present on the tonsils. Certain staphylococei always occur on the skin. Pneumocoeci oecur in the saliva of a considerable percentage of healthy persons (see Sternberg, Frost and others) and also on the tonsils in conjunction with streptococci, according to Dr. Ruediger's recent studies, and with even greater frequency. Diphtheria are found in the throats of normal persons, especially in connection with outbreaks of the disease in schools, asylums, and other institutions. Tuberele bacilli have been found on the nasal lining and skin of healthy persons. In outbreaks of typhoid fever, Asiatic cholera, and dysentery, when the bacilli of these diseases are disseminated freely, it is not unusual to find the specific germs in the intestinal contents of individuals that do not suffer from infection. In the recent condemic of cerebrospinal meningitis in New York, meningococci were isolated from the nasal mucus of about 10 per cent. of the persons that came into the most close contact with the patients. Frequently the meningocoeci were present in enormous numbers in such cases, while in numerous less exposed or not exposed individuals they were absent.8 Hence the evident

^{8.} J. Infect. Dis., 1906, Supplement 2.

necessity for early and careful isolation of patients with epidemic cerebrospinal meningitis. These instances illustrate the manner in which healthy persons may convey specific germs to those that are susceptible, i. e., present that complex of conditions necessary for the establishment of infections.

THE ROLE OF THE HOUSE FLY AND OTHER INSECTS IN THE SPREAD, OF INFECTIOUS DISEASES.*

ALICE HAMILTON, M.D. CHICAGO.

It is practically only within the last ten years that we have begun to turn our attention to insects as important factors in the spread of infectious diseases, and yet the idea is really very old and, in this case as in so many others, modern research and experimentation are simply explaining the real nature of phenomena which were known to keen observers hundreds of years ago. Way back in the sixteenth century, a Venetian physician hazarded the statement that the plague in Venice was carried from house to house by the swarms of flies with which the city was infested. Sydenham, in the seventeenth century, observed that a summer with abundant house flics meant an autumn of sickness, and there is an old Dutch proverb to the same effect. There is a curious note, in the London Lancet of 1863, as to a plague of "gangrenous flies" which appeared in the neighborhood of the ancient cemetery of Montmartre in Paris. The bite of this fly caused inflammation, mortification and death within 24 hours. Eighteenth-century writers thought that anthrax was caused by the bite of insects by direct inoculation. Laplanders and Siberians have long believed this. English surgeons for more than a hundred years have been saying that flies carried cholera infection, and the Egyptians think that gnats carry ophthalmia from one person to another. In very recent years this method of infection has attracted the attention of sanitarians and bacteriologists, and we now have a large body of experiments which prove that insects may and do convey bacterial infection, some of them by ingesting the bacteria and later depositing them in the excreta, but the larger number probably acting merely as mechanical carriers, as a bee carries pollen.

That this method of infection has so long been neglected is a matter of surprise, for when one thinks for a moment of the universal distribution of insects, their access to all sorts of infectious material, the excellent adaptation of their hair-covered bodies for the carrying of such material, and the fact that our commonest foods are the best culture media for many of the pathogenic bacteria, one wonders that the subject did not force itself on the attention of the medical profession long ago. If a platinum loop in a laboratory can convey typhoid bacilli from a broth tube to a tube of milk, a fly in the ward of a hospital can perform the same service between the discharges of a typhoid patient and the glass

^{*} Read before the Chicago Medical Society, April 4, 1906.

of milk on the table. It needs little imagination to follow the train of events, when we see ophthalmia spreading through an orphan asylum during the summer months, when the place is full of flies and the little inmates are too young to brush them away from their eyes. A visit to almost any dairy will show that the place, even when well kept, is not screened from insects; that the milk contains dead and dying flies, which have just come off the dung heaps or from the country privy vaults. The dairyman strains the flies out, but by that time the evil has been done and the culture medium inoculated. Fruit stands, bakeries, candy shops, butcher shops are all usually open to the visits of flies which have just risen from manure heaps, decaying garbage, and even dejecta deposited in alleys and vacant lots. The crawling insects—ants, cockroaches, bedbugs—are a less universal pest, yet not to be disregarded in this connection. This is not a matter of speculation and probability, but of actual demonstration. The body of facts on this subject is far too great for any but a hasty review, and I shall speak only briefly of those things which have been recorded by accurate observers.

Insects become carriers of infection by coming in contact with infectious material, which adheres to their bodies, or by eating it and later depositing the living organisms in their dejecta. The infection is conveyed directly or is deposited on food. In the case of direct infection, the insect may simply come in contact with an exposed surface or introduce the infection by biting. There are many cases recorded of anthrax following the bites of insects, usually gnats and so-called biting flies, among workers with cattle and sheep. Early in the nineteenth century a German physician wrote of two cases of malignant pustule developing at places where a fly had bitten and had been crushed. Close to the bitten persons at the time were the carcasses of animals which had died of anthrax. There are seven cases of septicemia reported following the bites of insects. There are cases of erysipelas, cases of corneal ulcer, diphtheritic conjunctivitis and even suppuration followed by fatal pvemia, all resulting from bites on the eyelids by flies, gnats and other insects. Efforts have been made to prove that bedbugs, collected in dirty rooms with sputum covered floors, can cause tuberculous infection by their bites, but these experiments are so far inconclusive. In all these cases, it is probable that the insects do not really act as intermediary hests, but carry the germs on their bodies, and that it is through the rubbing and scratching after the bite that the germs gain entrance through the abraded skin. In many of the cases of infection by biting, the insects had been crushed on the bitten spot and thus the germs on the surface of and within the body of the insect were spread over the skin.

Direct transmission from patient to patient has been observed in Florida sore eye, an epidemic infection which is quite common there. A tiny gnat, which settles on the cyclids and often gets into the eye, is undoubtedly the means of spreading the infection. Dewèvre produced impetigo in healthy children by means of pediculi collected from a child with the disease. As to the infectious diseases with unknown etiology, we can only speak speculatively, but it is surely not beyond the range of

probability that the acute exanthematous diseases may be thus transmitted from patient to victim. But the most common mode of infection by insects in our part of the world is undoubtedly the indirect method, the infection of foodstuffs by insects which have been in contact with infected material.

A large number of experiments have been made to demonstrate this mode of infection. Cholera, typhoid fever, tuberculosis and perhaps dysentery are the diseases which are probably most often conveyed in this way. As for tuberculosis, it repeatedly has been proven that flies which have fed on tuberculous sputum contain living and virulent tubercle bacilli in their intestines and on the surface of their bodies, but the tubercle bacillus multiplies very slowly and needs special culture medium, and, as recent investigations seem to show that rather a large dose of bacilli is needed for infection to take place, it is improbable that this mode of infection is as important in tuberculosis as in cholera and typhoid fever. The bacilli of cholera, of typhoid fever and of dysentery multiply rapidly, and for them our ordinary foodstuffs are excellent culture media.

It is natural that the attention of physicians should early have been called to the agency of flies in the spread of cholera, for cholera is a disease of fly-infected countries and of the fly-infected seasons. English surgeons in India have insisted for years that flies had much to do with the spread of cholera, and this long before the discovery of the germ. In the cholera epidemic of 1849, a British ship crew in the Mediterranean noticed that when they kept far out to sea the disease died down, but on two occasions when they neared shore and were visited by swarms of flies, although nobody landed, the epidemic started up again. Flies fed on cholera cultures carry the living germs for four days in their intestines. When allowed to drink from a glass of milk they infect the milk to such an extent that after 16 hours it may contain a hundred organisms to the drop. A fly caught in the autopsy room of a Hamburg hospital during the great cholera epidemic yielded many cholera bacilli. Milk that had been exposed to flies in a jail in India during the cholera season gave colonies of cholera bacilli.

More important for us is the connection between flies and typhoid fever and probably dysentery, although here we have no data to go on. No work has as yet been done on dysentery in this regard. In the case of typhoid fever, not only flies but also crawling insects come into play. Dr. Rosa Engelmann traced a house epidemic of typhoid fever to cockroaches. A German bacteriologist, working on mouse-typhoid, observed that the cage in which he kept his infected mice became overrun with ants which also swarmed to other cages of healthy mice. As a result the sound mice all sickened with mouse-typhoid. But the common house fly is the insect chiefly to be dreaded, for it has a far wider range of activity than has any crawling insect and its presence is not regarded as a disgrace to a well-conducted household or institution, as is the presence of other insects.

The Spanish-American war of 1898, with its enormous typhoid morbidity in camps supplied with pure water and milk, first called atten-

tion in this country to the agency of flies in the spread of typhoid. Dr. H. A. Veeder, writing on this subject in the fall of 1898, said that in his opinion flies were more important agents in the spread of typhoid infection in military camps than were drinking water or milk. Drs. Reed, Vaughan and Shakespeare, in their report on the "Origin and Spread of Typhoid Fever in Military Camps During the Spanish War in 1898," state that, in many of the camps, flies were undoubtedly the most important agents in the spread of typhoid fever. "Flies alternately visited and fed on the infected fecal matter and the food in the mess tents. More than once it happened that when lime had been sprinkled over the fecal matter in the pits, flies with their fect covered with lime were seen walking over the food. Typhoid fever was much less frequent among members of messes who had their mess tents screened, than it was among those who took no such precautions. Typhoid fever gradually died out, in the fall of 1898, in the camps at Knoxville and Meade, with the disappearance of the fly, and this occurred at the time of the year, when in civil practice, typhoid fever is generally on the increase. The first pits at Knoxville contained, before the first twenty-four hours had passed after the arrival of the troops, fecal matter infected with typhoid bacillus. Flies swarmed everywhere. Instead of abating, the disease increased. The soldiers were using the same water used by the inhabitants of West Knoxville, and among the latter there was not at that time a case of typhoid fever. Certainly the disease was not disseminated through the drinking water."

Notice that the disease was at its height when the flies were most abundant and sank with their disappearance. The same experience is noted by English army surgeons during the South African war and in India. Typhoid fever is not a disease of India, it is brought in by the English and spreads through camps which have a perfectly pure water supply. The South African surgeons undertook to prove experimentally that flies can carry typhoid bacilli from fecal discharges to food. These investigators had adult and larval flies placed in a specially constructed cage in which were also placed Petri dishes containing a mixture of syrup, a fresh typhoid stool and a fresh culture of typhoid bacilli, and sometimes the whole was lightly covered with earth. After feeding on this the flies would settle on other Petri dishes which contained sterile culture medium. The typhoid colonies were recovered in every case.

Results similar to these were obtained during a study made in the fall of 1902, of the last typhoid epidemic in Chicago, in which epidemic a comparatively small area on the West Side was the region most severely affected. Within the limits of the Nineteenth ward, which contains one thirty-sixth of the total population, there were between one-sixth and one-seventh of all the deaths from this disease. Investigation showed that this neighborhood did not differ from other parts of the city in the character of its inhabitants, the source of its water supply or the source of the milk consumed, but, that being an old part of the city, it had an extremely faulty and inadequate system of sewage disposal. The combination of small, inadequate sewer pipes, an almost unprecedentedly heavy rainfall, a large number of old-fashioned privies with no sewer

eonnections, and a larger number of places with useless connections, resulted in overflow of sewage and the low-lying lots became soaked with exercta containing typhoid bacilli. As houses and shops in this part of the city are mostly innocent of screens, the contamination of food by flies was very easy. This epidemic, like that of the Spanish war, was at its height during the months of flies, July, August and September, and died out with their disappearance. In this case it was possible to demonstrate the actual presence of typhoid bacilli on the bodies of flies caught in and around privies and houses where there were typhoid cases.

Anyone will admit that this mode of infection in typhoid fever should not be ignored, when he thinks of the careless disposal of excreta, the resistant character of the typhoid bacillus, the length of time it may persist in the human body after recovery from the disease, the universal distribution of house flies and their easy access to foods of all kinds. The typhoid bacillus has been found in ordinary, unsterilized soil 315 days after it was planted there. It has survived three months exposure to 19° below freezing. It has lived 25 days in soil exposed to the summer sun. It has been found in the feees of flies 23 days after they had fed on typhoid discharges. In ordinary cases of typhoid fever, care is exereised to disinfect the intestinal discharges only during the height of the disease. Later on, this is stopped and the urine is often not disinfected throughout the attack. Yet the bacilli may be found in the discharges long after convalcaeence. Especially important is their long persistence in the urine, for urine is often voided in places easy of access for flies. Horton Smith reported a case in which one cubic centimeter of urine eontained 500,000,000 bacilli, and Petrusehky found them in the urine two months after the temperature had become normal. Physieians praeticing in country districts bear witness to the fact that sporadic cases of typhoid fever may appear in seattered farm houses when it is impossible to find the source of intection. But nobody has ever estimated the distance traveled by flies and, though this is a point hard to prove, no one can deny the possibility that they are the responsible agents in some of these eases.

The conclusions are almost too obvious to need statement. Infectious material of any kind is a danger when left exposed to the visits of insects. Rapid disposal of all such material and scrupulous eare in the extermination of all insects, especially the common house fly, should be among the most ordinary rules of household and institutional hygiene

THE STANDARD OF GOVERNMENT MEAT INSPECTION.

W. K. JAQUES, M.D.

CHICAGO.

There are three interests to be considered in the inspection of meat intended for food products. The paramount interest which makes inspection necessary is that of the public which consumes the food. The next interest, which may be opposed to the first, is that of the owner of the animals inspected. The third interest is of great importance when the effectiveness of inspection is considered, and that is the personal interest

of the inspector. If he has, in any degree, interests in common with the owner of the animals, the effectiveness of his inspection will suffer. In case the public criticises inspection, it should be self-evident that the other two interests will each feel that they are attacked and will unite in opposing the criticism. Thus, whenever the efficiency of the stock-yards inspection has been questioned, the government inspectors have hastened to back up the packers in their assertions that their inspection is perfect.

Government inspection in the packing houses is not obligatory. It is furnished at request of the packers, who can not dispose of their meat products to foreign buyers without our federal guarantee as to quality. The whole subject of meat inspection is so intricate and confusing, embracing as it does, three inspections, government, state and city, that to go into the subject exhaustively is beyond the scope of this article. Only one phase of it, that relating to the passing of tubercular meat into the public food supply, can here be treated. That this is possible under

the rules of the government I propose to show.

To the public, inspection means protection. Government inspection should have all the security of a government bond. To establish inspection in which the interests of the packers and inspectors are permitted to make the standard is to defeat the object of inspection and gives a false security. The public has the right to make the standard of what it will and will not eat. But the greatest responsibility rests upon the medical profession who are best informed as to what is necessary and how to avoid the dangers of diseased meat. It is no credit to the medical profession that government rules for inspection permitted the passing of six grades of tubercular meat for so many years. When I began the preparation of this article, I wrote to Washington for the latest rules of the government and find that Nov. 5, 1905, they were amended so that one grade was omitted, still leaving five to be passed. Within the limits of this paper, it is not possible to comment on all the rules as issued by the Bureau of Animal Industry of the Agricultural Department, so I shall confine myself to those relating to tuberculosis, which are as follows:

RULES AND REGULATIONS FOR THE INSPECTION OF LIVE STOCK AND THEIR PRODUCTS.

United States Department of Agriculture.

OFFICE OF THE SECRETARY, WASHINGTON, D. C., Nov. 7, 1905.

It is hereby ordered that amendment No. 1, dated April 6, 1905, to B. A. I. Order No. 125 be and the same is hereby revoked, and sub-section (k) of section 7 of the Rules and Regulations for the inspection of live stock and their products, dated June 27, 1904 (B. A. I. Order No. 125), be and the same is hereby amended to read as follows:

(k) Tuberculosis.—All carcasses affected with tuberculosis shall be condemned, except those in which the lesions are slight, calcified or encapsulated, and are confined to the tissues indicated in any one of the fol-

lowing five paragraphs, or to a less number of such tissues:

(1) The cervical lymphatic glands and two groups of visceral lymphatic glands in a single body cavity, such as the cervical, bronchial and mediastinal glands, or cervical, hepatic and mesenteric glands.

(2) The cervical lymphatic glands and one group of visceral lymphatic glands and one organ in a single body cavity, such as the cervical and bronchial glands and lung, or the cervical and hepatic glands and liver.

Note.—The pleura or peritoneum may be substituted for the group of visceral lymphatic glands in paragraph (2); for example, the cervical glands, pleura, and lung, or the cervical glands, liver and peritoneum.

(3) Two groups of visceral lymphatic glands and one organ in a single body cavity, such as the bronchial and mediastinal glands and lung,

or the hepatic and mesenteric glands and liver.

(4) The cervical lymphatic glands and one group of visceral lymphatic glands in each body cavity, such as the cervical, bronchial and

hepatic glands.

(5) Two groups of visceral lymphatic glands in the thoracic cavity and one group in the abdominal cavity, or one group of visceral lymphatic glands in the thoracic cavity and two groups in the abdominal cavity, such as the bronchial, mediastinal and hepatic glands, or the bronchial, hepatic and mesenteric glands.

CARCASSES THAT MAY BE RENDERED INTO LARD.

(6) The hog carcasses condemned, in which the lesions of tuberculosis are located as described in any one of the above five paragraphs, but are in a state of caseation or liquefaction necrosis or surrounded by hypercmic zoncs, and also those in which slight, calcified or encapsulated lesions are found in more visceral organs or more groups of visceral lymphatic glands than are indicated in any one of the above five paragraphs, may be rendered into lard after the diseased parts are removed, provided they are cooked by steam at a temperature not lower than 220° F. for not less than four hours.

James Wilson, Secretary.

I wish also to call attention to an explanatory sentence in the intro-

duction to these rules, which reads as follows:

"It is understood, however, that owing to the fact that it is impracticable to formulate rules covering every case, and to designate at just what stage a process becomes loathsome, or a disease noxious, the final disposition of all those not specifically covered by these rules will be left

to the judgment of the inspector."

With such a wide latitude for the exercise of his judgment, it is quite important that this judgment should be influenced as much as possible in favor of the consumer. Judgment is the result of education and it is the responsible duty of the medical profession to educate the inspector as to what is loathsome and noxious. The public pays for inspection and also pays a good price for the meat and has the right to know what it is getting. The only excuse that can be given for the present standard of government inspection is ignorance on the part of the public and the medical profession of the actual conditions. The slaughter of domestic animals and their conversion into food products is repugnant and brutalizing and is avoided by all not actually engaged in the work. The workmen in the slaughter houses are largely composed of the most ignorant foreigners, and those who are not, are not likely to discuss their unpleasant occupation. The whole industry is thus walled in by this general aversion, and the inattention of the public eye has permitted the packers

and inspectors to make their own standards. It might be supposed that, if the public is excluded, the workmen would be cognizant of the passing of diseased meat, but this is easily understood by those who are familiar with the methods of slaughtering. The work is not only exceedingly rapid, but is divided up so that each man has but a small portion of the work of killing and dressing an animal. A sheep may pass through almost a hundred hands in being converted into mutton. Each workman performs his part of the work without a thought of what becomes of the rest.

Technical knowledge is essential in detecting diseased meat and this is not possessed by either the average workman or the public. Even the physician who is not familiar with these evidences would permit tons of diseased meat to pass him in the killing beds without knowing it. Physicians are best fitted to say what shall be the standard of condemnation of meat products because they know that disease follows the same laws in both human beings and animals; and they also know that it requires skill to discover disease in one as well as the other. By this standard it is evident to them how much value can be placed on antemortem inspection. They would feel little confidence in the diagnosis of even the skilled professor, if he had to make it from what he saw as his patients walked or trotted past him. Those of us who have been at the postmortem table know that the diagnosis of the most learned professor may be disproved, although he may have had the assistance of the stethescope, microscope, x-ray and all the resources of chemistry. Although antemortem inspection has some value, it is evident that the most reliable inspection can only be made at the death of the animal when all the organs are intact. The kidneys may show conditions not revealed in the meat itself. One stroke of the knife and the diseased organs, with their evidence, are separated from the meat.

The safety of the consumer demands that meat inspection should be made in a good light, by one with the technical knowledge that will discover disease and a conscience that will not permit him to pass what he would not eat himself, as well as the power to render at once condemned meat absolutely unfit for food. Meat inspection that is inadequate is dangerous because of the fancied security. The greatest factor that influences the inspection of meat is its money value. To make inspection effective, it must be removed from the influence of the owner or producer. Meum et tuum is the cause of wide difference in meat inspection. If it is my meat for sale, it is perfectly good for you to eat. This is the rule of ownership. I speak from experience, for I can name a Christian physician who bought a stock farm; whose cattle developed actinomycosis and he shipped them to the stock yards. They all passed but three, which were rejected by the city inspectors, after they had passed the state inspectors. The doctor tried his best to get them through, urging that they were all right.

Bovine tubercular bacilli are recognized from laboratory experiments as being the most virulent of all tubercular bacilli. Experience shows that life out doors with sunlight and fresh air furnishes an environment

that produces the greatest resistance to the invasion of the tubercular germ. From this fact, it may be understood why a tubercle bacillus must have great virulence if it is able to bore its way into the vitals of the mighty bullock, and how dangerous must be its transference into the tissues of the light and air-starved human beings in the city. McFarland, in his text-book on bacteria, says: "From these data (a series of animal experiments) it is evident that the bovine bacillus is by far the most virulent and dangerous organism. While the human tubercle bacillus infects cattle with difficulty, the bovine bacillus infects animals, and probably man, with great readiness."

The report of the Burcau of Animal Industry for 1904, in the article on "Danger of Infection with Tuberculosis," is worthy of careful study. After referring to those followers of Robert Koch who point out that the majority of tubercles found in human lesions with sufficient virulence to infect cattle are isolated from children, and that these were really bovine bacilli contracted from drinking milk, the article continues as follows:

"In this connection, a reference made in a recent number of the British Medical Journal, and in other publications, to the latest recorded observations of the German committee for the Investigation of Tuberculosis, which came into existence after the declaration of Doctor Koch for the distinctive grouping of the human and bovine tubercle bacilli, is of great interest. We are told that 56 different tubercle bacilli were isolated from human lesions, and that six of them, or 10.71 per cent. were found to be bovine tubercle bacilli. The human bacilli are distinguished from the bovine by morphological characteristics. We are also told that tubercle bacilli are constant in their varietal character, hence human bacilli are always human bacilli, and bovine bacilli, likewise, always bovine bacilli."

Again he continues in another paragraph: "The exposure of man to human tubercular infection is infinitely greater, and this fact is generally admitted. The bacilli encounter him everywhere—on the streets, in public rooms, in public conveyances, on articles of food handled by affected persons and not afterwards sterilized by the application of heat, carried into his house on his own clothing and especially on the long skirts of women, in the books obtained from libraries, and, in one of the worst forms, in the atmosphere, while conversing with tubercular-infected persons. And yet, a responsible investigating committee, composed of men presumably selected with a careful regard for their ability to deal with the subject, announces that over 10 per cent. of the tubercle bacilli isolated by them from human lesions in a series of special investigations are bovine tubercle bacilli, and that bovine tubercle bacilli are morphologically constant organisms. It almost justifies the assumption, when we bear in mind that human bacilli are rarely virulent for cattle and a number of other animals and that bovine bacilli are infectious for a great variety of animals—the Quadrumana, the closest possible biological approach to man, included—that tuberculosis of man would be a much simpler problem to deal with, if the constantly occurring accretions of superlatively virulent bacilli through the milk pail, could be effectually stopped."

An important fact in the series of experiments, recorded in this report of the Bureau of Animal Industry, is that the animals which were slightly affected were capable of infecting others. On the other hand, animals badly affected did not cause the degree of infection which the extent of the disease seemed to warrant. This emphasizes the well-known fact that it is virulence as well as numbers, in tubercular infection, that must be considered. The milk or meat from a badly affected animal may not be as dangerous because of its low virulence, as the milk and meat from an animal with a limited tubercular area of a virulent type. A tubercular gland is a tubercular area communicable with the fluids of the body, in which the tubercular bacilli are able to colonize. From this focus bacilli are being continually thrown out. The inoculation of other tissues depends on their immunity or resistance.

Let us take, for example, a bulloek with tubercular glands, which permit it to be passed by the government inspector, and outline the average eonditions attending the transportation of stock to market. animal, probably in some western state, objects to leaving its pasture; is ehased, perhaps, beaten and finally driven to a eattle pen, where it may have to defend itself against hostile fellows. It is then erowded into a stock ear, which is an open eage, and whirled across the prairies, exposed to the prevailing weather. The law permits it to be left without water, rest or food for 28 hours. Then it reaches the stock yards and at last the killing beds. Could a better method be devised for breaking down that animal's resistance to the virulent bacilli coursing through the fluids of the body? The only part, it is reasonable to believe, that would be free from tubercular bacilli, would be the hoofs and horns. Yet the rules of the government permit this meat to come on your table and mine. The government officials justify this standard by saying that the meat of the American is not eaten raw, but cooked. This is not always true. Many persons prefer their meat rare and it is a common practice for the medical profession to prescribe raw beef juice. When Rudyard Kipling was ill with pneumonia, his diet was raw beef juice. Imagine the results of feeding a patient recovering from pneumonia with raw juice from a tuberculous animal!

While the intentional inoculation of human tissues with bovine tubercular bacilli has not been accomplished, there have been accumulating a large number of accidental inoculations. I shall quote one or two from the report of the committee of the American Public Health Association: "L. Pfeiffer eites the ease of Veterinarian Moses, 34 years old, of healthy family and personally in good health, who pricked his left thumb in making an autopsy on a tuberculous cow. The point of the knife probably penetrated into the articulation of the first and second phalanges. The puncture healed without suppuration, but at the end of six months, there formed at the cicatrix a cutaneous tubercle, and the joint was removed. Soon after the patient began to cough and died of phthisis, 18 months after the accident. On opening the articulation of the thumb it was found filled with easeous masses, extraordinarily rich in tubercle bacilli."

"A very interesting ease of 'primary subeutaneous tuberculosis' eaused by the topical application of eream, was reported by Grothan. A little

girl six years old had suffered from an eruption on the left leg, supposed to be due to ivy poisoning. This was treated at home by the application of fresh cream. When seen by Grothan, there was a painless ulcer of irregular shape the size of a 25-cent piece on the posterior aspect of the leg, having the characteristic appearance of a tubercular ulcer, with reddish-tinged borders slightly overhanging the floor, which was covered with granulations and watery pus. There were also about a dozen light mahogany-colored spots confined to the calf of the leg and lower third of the thigh, varying from the size of a hazelnut to the half of a large walnut and containing masses of cascous material. The cow was examined and the udder scemed normal, yet inguinal and intraperitonal inoculation of two rabbits with a mixture of milk and cream gave positive results in both inoculations. The caseous material from the nodules of the girl's leg, injected into the peritoneum of a rabbit, produced tuberculous peritonitis and death in about three weeks. The family used milk from one cow only at the time the application was made."

Dr. M. T. Naughton, of Chicago, communicates the following, which was observed in his practice: G. E. W., Pole, age 24, weight, 170 pounds; healthy looking man; butcher by occupation. Family history negative. Father of three healthy children. Has no recollection of having been previously sick. On May 3, 1899, while cleaning cattle viscera, he fell and a stationary meathook, upon which hearts and lungs are hung, penetrated through the right hand between the second and third metacarpal bones. A tendo vaginitis resulted, with some lymphangitis of the arm. received the usual treatment for an infected wound and apparently made a good recovery with, however, some limited motion of the fingers and a sensitive scar at the site of puncture. Four months afterwards, an abscess formed in the axilla, which was cleaned out and tubercle bacilli were demonstrated in the broken-down gland tissue. At this time there was no soreness in the arm lymphatics or elbow gland, but he complained that there had been. In three months afterwards, or seven months from the original accident, he died from pulmonary tuberculosis.

These are very clear cases and could be multiplied to add strength to the evidence. If the bovine bacillus, when inoculated in the skin, produces, at least, as serious results as the human bacillus, we have a right to conclude that mankind is equally susceptible to the bovine as to the

human form of contagion.

The more we study the control of human tuberculosis, the more we must be impressed with the interdependence of the animal and the human in this disease. Keep in mind the virulence of the bovine tubercle bacillus; the infant population increasingly dependent upon cow's milk for food; the enormous amount of beef that is eaten without being sufficiently cooked; and the danger from exposure of those engaged in the cattle industry. Realizing all this, it is impossible to escape the conviction that the eradication of tuberculosis from the human race must first include its eradication from the domestic animals. The first step in this direction must be to close the market against tubercular meat. Animal tuberculosis is largely the result of conditions which the farmer can remedy if he is made to recognize them. Neither the butcher nor the packer should lose

all the diseased meat for they are not responsible for its presence. Every animal that goes into the public food supply should be so marked that it may be traced to its owner or producer. The giant task of restricting and controlling tuberculosis among domestic animals will never be any easier. The public does not ask an impossibility, when it demands that the government shall supply an inspection which will protect every table from tubercular meat.

Chicago, 4316 Greenwood Avenue.

After the completion of this article, I notice the following in the Health Department bulletin, issued March 24th:

"At a conference held during the week, between representatives of the United States Bureau of Animal Industry and the department, it was arranged that the government and the department inspectors should work on a uniform system, and that the rules and regulations of the bureau, as amended, and now agreeing with the rules of the department, shall hereafter be the basis of condemnations by both sets of inspectors."

Just how far this incident remedies the previous conditions, and the reason for this sudden change, I do not know. I think it proper to call attention to the following paragraph from the rules and regulations of the

government for the inspection of live stock and their products:

"No. 13.—Should the owners of condemned carcasses not consent to the foregoing disposition of them, then the inspectors shall attach to such carcasses, or parts, a condemnation tag, by means of a wire and lead seal and brand the word 'condemned' upon each side and quarter, or piece of such carcasses and communicate the facts to the department. The seal so attached shall have the word 'Condemned' impressed upon the one side and the letters 'U. S. A.' upon the reverse side. A record must be kept of the kind and weight of the carcasses and they shall, under the supervision of the inspector, or his assistant, be removed from the abbatoir; and said firm or corporation, shall forward, through the inspector, to the Secretary of Agriculture, a sworn statement monthly, giving in detail the disposition of the carcasses so condemned, and, if the same have been sold, showing to whom, whether for consumption as food or otherwise, with what knowledge, if any, by the purchasers of their condemnation by this department, and whether or not before such sale said carcasses have been cooked or their condition at the time of inspection by this department altered, and if so, in what way."

Thus you see that after all the condemnation, branding and tagging, the government can not destroy a pound of this meat if the owner objects but must hand it back to him with no punishment for sending it into the public food supply. The enormous responsibility for the destruction of diseased meat rests on the commissioner of health of the city of Chicago.

With a knowledge of this fact—that the legal destruction of diseased meat is in the hands of the city inspectors—I wish to quote the following from the Health Department Bulletin of March 31, 1906: "The meat inspectors at the Union Stockyards during March, 1906, condemned and destroyed 445 cattle, 554 hogs, 42 calves, 18 sheep, 2,080 pounds of dressed meat—a total of 367,271 pounds."

There was no inspection at the stock yards during March, 1905.

SOMNOFORM ANESTHESIA.

C. M. PADEN, D.D.S. CHICAGO.

Anesthesia is a subject in which every physician, every surgeon and every specialist takes the most profound interest. A few years ago Dr. Rolland, late house surgeon of Paris Hospital, professor of anesthesia, and dean of Dental School and Hospital of Bordeaux, France, realized that new discoveries were being made almost daily along the lines of medicine and surgery, but anesthesia had been left in the background. So, after several years of hard work, study and experimenting, he discovered that which he so anxiously sought, a new anesthetie, composed of three well-known drugs, in proportion as follows: Chlorid of Ethel, 60 per eent., Chlorid of Methyl, 35 per eent., Bromid of Ethel. 5 per eent. This combination he called "Somnoform." It will be seen that the various constituents of Somnoform are all well-known anesthetic agents. The operator must not, however, on that account be prejudiced against the drug, for it is not possible to predict the results which may follow from a mixture by merely knowing those of its components. You all know that the combination of two or more drugs changes the action of the drug. By experimenting, Dr. Rolland found that the combination of these three anesthetic drugs gave him his ideal anesthetic for all minor operations. To blend already well-known drugs into one mixture from which the respective advantages of each one could be obtained and corresponding effects produced, without having many of the inconveniences and the same degree of danger of the individual drugs, was the faseinating problem which after long and patient researches, Dr. Rolland solved so ably.

A series of 1,500,000 favorable eases confirms without doubt the satisfactory laboratory experiments previously earried out, showing conclusively the advantages of this agent over chloroform, ether and nitrous oxid, from the minimum of danger incurred by its administration when employed for brief anesthesia. For this part of my paper, showing the physiological action of Somnoform, I am indebted to Dr. Aguilar, of Madrid, Spain, who read a paper on anesthesia at the St. Louis Exposition in 1904. From the brilliant work done by Dr. Rolland, these notes have been prepared. In order that an anesthetic should enter the respiratory tract and act on the nerve centers, it must be in the gaseous form; and the rapidity of its absorption is in direct ratio to its degree of diffusibility. The blood corpuscles become saturated with the narcotic vapors instead of with oxygen; therefore, the action of the gas on the nervous system will be rapid in proportion to the rapidity of absorption. Dr. Rolland presents the problem of anesthesia in the following propositions:

1. To produce anesthesia, it is necessary that the tension of the anesthetic gas be superior to that of oxygen, so that it may, in a certain proportion, take the place of the latter in the pulmonary alveoli. 2. The tension of the gas being proportionate to its volatility, the more volatile the gas is, the easier can it be made to take the place of oxygen. 3. The

ideal anesthetic, if such be attainable, would be the one behaving in its conditions of entry, of sojourn, and of exit from the body, as does oxygen. If we follow the course of oxygen in the body, we see that the red corpuscles, after becoming charged with oxygen in the lungs during inhalation, distribute it to the tissue throughout the body. The blood corpuscles have their period of activity during their course through the arterial system. When the oxygen has been given up, the corpuscles return through the venous system to the lungs in an inert and dormant state; and there, by contact with the oxygen, resume their activity. Now, as about twenty-five or thirty seconds are necessary for a red corpuscle after leaving the heart to return to it, the action of the oxygen would last from twelve to fifteen seconds; therefore, an anosthetic capable of being absorbed practically in the same manner as oxygen, should produce its effects in about fifteen seconds, and when the administration is discontinued it should be eliminated in proportion, as the corpuscles of the blood again come in contact with the oxygen. This, almost to precision, is what takes place with Somnoform. In the study of this physiological action we observe that Somnoform produces the following phenomena.

ON CIRCULATION.

Somnoform has a powerful action on the sympathetic system, increasing the arterial tension and the frequency of the cardiac contractions. A series of curves of the blood tension, taken with the sphygmograph of Marey and the sphygmomanometer of Potain on the radical artery of Dr. Rolland, showed in twenty minutes a variation of from 13½ of normal blood pressure to 14½, 17, 17, 13, 14, 15, 14, 14, 13½, during, through and after the anesthesia. The pulse, which was formerly 76 per minute, presents in the same observation a frequency of 76, 84, 76, 76, 68. Respiration, which, when normal, was 16 per minute, went up to 28, 20, 19, 20, 20, and a careful microscopical study of the blood of subjects under Somnoform showed that the anesthesia of from five to eighteen minutes' duration, produced no important modifications in the blood. The urine of the anesthetized person also remained normal.

THE NERVOUS SYSTEM.

Microscopical studies of the cerebral centers show the modifications produced by Somnoform on the neuron. The neuron, as is well known, is the anatomical nerve element, or the nerve cell and its branches, as discovered and investigated by Ramon y Cajal, of Madrid, and is composed of three parts: first, a central part, which is the real cell, with its protoplasma, with and without peculiar affinity for coloring matter and its nucleus; second, a peripheral part, made up of protoplasmic branches and the various ramifications (dentrites), with ends which do not anastomose; and, third, the more peripheral part formed by the axis cylinders, which do anastomose.

THE CEREBRUM AND CEREBELLUM.

The investigations were made on the cerebrum and cerebellum of rabbits and cats; first, on non-anesthized animals (control subjects);

second on the animal at the end of ancsthesia, varying from five to fifteen or twenty minutes; third, on animals at the end of prolonged anesthesia (one hour or more); and, fourth, on the animal one hour after consciousness had returned. The staining of tissue was made by the rapid method of Ramon y Cajal, of Madrid, and by the intravaseular injection of Gubler's methylene blue. In the right carotid artery of the animal experimented upon, injections were made every five minutes of from two to ten e.e. (or according to the size of the animal) of methylene blue. At the end of half an hour the braincase was opened and the microscopic sections were obtained. The rescarches were always controlled on non-anesthetized animals. The change brought about in the neuron by Somnoform differs in the various regions of the cerebrum and cerebellum, also in accordance with the duration of the anesthesia.

FIRST SERIES; SHORT ANESTHESIA.

Cerebral Covering.—The pyramidal cells, with their branches, remain normal; they did not change in size. The chromophile granulations of the protoplasm could be clearly seen; the nuclei were normal.

Cerebellar Covering.—The methods of Golgi and Nissl show the sharp modifications undergone by the eells of Purkinje, a slight deformation and irregularity of shape. The protoplasmic prolongations were varicose. It appears that, from the beginning of anesthesia, the mixture has a particular action on the nerve elements of the cerebellar covering.

SECOND SERIES; DEEP AND LONG ANESTHESIA.

In this series of experiments the guinea-pigs died at the end of a quarter of an hour, or after twenty minutes. Cats, as well as rabbits, resist for several hours. Where fragments of the nerve centers have been removed from the living animal, or from an animal which has just died, the results obtained by examination are the same, and the modifications are as clear in the cerebral as in the cerebellar covering.

Cerebrum.—The cells diminish in volume. The protoplasm presents excessively elearer zones, and the protoplasmie branches remain intact.

Cerebellar Covering.—The modifications of the cells of Purkinje are very marked. The protoplasmic branches are deformed and present varieosities and knots.

THIRD SERIES; ONE HOUR AFTER RECOVERY.

There was a return of all the elements to their normal state, excepting the cells of Purkinje, which are slower to regain their normal form. Speaking of these experiments, Dr. Rolland concludes as follows: "Somnoform has an elective action on the cells of Purkinje, thus suppressing sensitivity to pain and temperature—its passage through the eerebellum; and, when there is saturation of execss of the anesthesia, the pyramidal cells are impressed, determining loss of eonsciousness." It only remains to state that the results of this observation show that the minimum of danger is incurred in the administration of Somnoform, which, during a short operation, causes sleep without, in any way, aeting on the cerebral covering. This selective power on the part of certain substances for a

definite portion of the nervous system should not be surprising to us. We know, for instance, that chloroform, ether and alcohol have in their action a preference for the cerebral covering; that cocain in moderate doses acts on the peripheral endings of sensory nerves; that strychnin shows a preference for the cellular elements of the anterior columns of the spinal cord; that nicotin paralyzes the nerve cells of the sympathetic ganglia; that curare acts on the motor nerve endings. These experiments show conclusively that Somnoform acts first on the cerebellum and. secondly, on the cerebrum.

CLINICAL STUDY.

Somnoform, as is the case with any other anesthetic, determines in the patient three well-defined states: First, preanesthetic period, or that of induction; second, anesthetic period, or that of resolution; third, postanesthetic period, or that of elimination or return to consciousness. In each of these periods we observe two types of phenomena, subjective and objective. The subjective phenomena in the first period are emotional, a feeling of anxiety, of blurred vision, of suffocation, tinnitus aurium, light tickling in the extremities, and the strange sensation of having a warm compress on the cerebrum from the occipital to the frontal lobes. In the second period, or that of anesthesia, the patient experiences no sensation whatever. The third, or postanesthetic period, commences by a sensation of far-away buzzing, the reappearance of the sense of hearing, dreams of different types, gay, religious, amorous, professional, etc., generally in relation to the subject of which the patient was thinking immediately before the anesthesia. At first, he fails to recognize the place and the persons that surround him. This state is followed by a return of motion, with a tickling in the extremitics.

Clinical Classing of Cases.—Clinically, we can group the patients, as follows: The first class, embracing 90 per cent. of all cases, consists of those patients who are tranquil and unresisting. With a dose of from three to five c.c. in from fifteen to twenty seconds they are anesthetized, and they remain so from fifty to seventy seconds and sometimes for nearly two minutes. When they regain consciousness they are pleased, and express satisfaction and wonder at the slight amount of inconvenience they have experienced. The second class will be more difficult to anesthetize. It comprises the restless class of patients who involuntarily resist anesthesia. When the administration begins, they fight to get the mask off the face, they swallow but do not breathe, at first; sometimes they cry out, but finally lapse into unconsciousness. These patients are found in the proportion of 8 or 9 per cent. The third class of patients is composed of the alcoholic, hysterical, epileptics, and tobacco users. They are difficult to anesthetize, and the elimination of the anesthetic takes place slowly; they are irritable and the anesthetic seems to have on them a hysterogenic action, provoking a nervous crisis. Fortunately, patients of this kind will be found only in a small proportion of about one per cent.

After deciding to make a specialty of administering anesthetics for extracting teeth, and for all minor surgical operations, I purchased a Somnoform outfit. After several hundred very successful administrations

I feel that I am in a position to verify the statement of one of our most eminent writers, that "Somnoform is the greatest clinical discovery of modern times." After first taking the anesthetic myself and finding it so pleasing in its action and so perfectly satisfactory in its results, I felt that I could safely recommend it to my patients as a very pleasant and easy anesthetie. My knowledge of administering the drug was limited to the directions accompanying the outfit. I naturally met with some little trouble with some patients, owing to inexperience, all of which were overcome after eareful experiments. I found Somnoform, like all other ancsthetics, does not work well with alcoholics, epileptics and tobacco users. They are difficult to anesthetize, and the elimination takes place very slowly. My experience has taught me, however, that this elass of patients take Somnoform better than nitrous oxid, chloroform or ether. I have administered Somnoform to all classes of people, old and young (my oldest patient being nearly eighty years of age, my youngest being only two years of age), to anemics, insane, sick or well, with most gratifying results in all of my several hundred administrations.

One experience, which was quite an amusing one, was in the case of an elderly physician, who came to my office to have two teeth extracted. He objected to an anesthetic, saying, "He did not think he could be anesthetized." I finally prevailed upon him to allow me to administer Somnoform. Before beginning the operation I laid my forceps on the table in front of him, remarking that I would extract the upper tooth first, then the lower one on the opposite side, but doing exactly the reverse. He was thoroughly anesthetized. Upon regaining consciousness, he declared that he knew everything I did during the operation, but he did not experience any pain. I asked him which tooth I had extracted first. He was quite sure that I had extracted the upper tooth first, as I had told him; but when his friends laughed and told him of the joke I had played on him he was forced to admit that he knew nothing of the operation. In one ease, where a friend timed the operation, in fifteen seconds after placing the inhaler over the face, I was operating, extracting eleven teeth, and in one minute and fifteen seconds the patient was thoroughly awake and knew nothing whatever of what had been done. A physician brought to my office an anemic, who was suffering with an alveolar abscess of two years standing. She had visited other dentists and physicians, who all advised her not to take an anesthetic of any kind, on account of her anemic condition, but the woman had become desperate, said she preferred death to continual suffering, and it was through her pleading that I consented to perform the operation. Her anemic condition showed no marked difference during the anesthesia. I removed three roots, the direct cause of the alveolar abscess, and the patient got out of my chair exclaiming that she did not realize that she had been under an anesthetic. This patient had been confined to her bed for the greater part of two years, and on the day following the operation she sent me word that she had never felt better in her life. My first experience with a child was the case of a little girl eight years of age, who came into my office smiling, and said she wanted to take gas and have a tooth extracted. I gave her Somnoform and immediately upon her awakening after the operation I asked her how she felt. She said, "Fine and dandy." Another patient

was brought to my office by a prominent dentist from the North Side. He said he had tried on three different occasions to anesthetize the patient with nitrous oxid, and that he had given her enough gas to fill a balloon. Each time his efforts were unsuccessful, so he decided to try Somnoform, and brought her to me. She had several very bad roots to be extracted. I ancethetized her four times during the one sitting without any trouble to myself or inconvenience to the patient. Another patient had the roots of eighteen teeth to be extracted. They were so tightly embedded in the process and the hemorrhage was so great that after extracting two or three teeth, the mouth would be so filled with blood that I could not see to operate, so I allowed the patient to wake up and get rid of the blood. After I extracted the last tooth, I was surprised to find that I had administered the anesthetic eight different times at one sitting. On another occasion, a dentist brought a patient, an extremely nervous and excitable subject. Her physician had tried for over two hours to anosthetize her with chloroform, but had to give it up. At first she resisted the anesthetic, but after working about twice as long as with an ordinary patient I succeeded in thoroughly anesthetizing her. Both patient and dentist were greatly pleased with the operation. I would like to call your attention to the ease of a young man who ealled on a neighboring dentist to have two roots extracted. Immediately on getting into the chair he fainted. The dentist called in Dr. C. G. McCollough to assist him. After reviving the patient Dr. McCullough advised the dentist to send him to me and have the operation performed under Somnoform. He came into my office looking very pale and feeling quite nervous. He took the ancethetic very quietly and after the operation he revived and seemed to be all right, but after a few minutes he complained of feeling faint. I administered a restorative and in a short time he left saying that he felt fine. Later in the day the doctor and dentist both ealled to see if there were any unpleasant features following the operation and were greatly surprised to learn that there were none worth mentioning. I administered Somnoform to an epileptie, who frequently had as high as four convulsions a day. I gave her the anesthetic four times and extracted several very bad roots. During, or after the operation, there were no bad symptoms whatever. I gave an anesthetic for Dr. Clark W. Hawley for an operation on the ear and throat, and the removal of tumor on the neek; for Dr. R. H. Brown for the removal of tonsils and adenoids; for Dr. N. LaDoit Johnson for internal examination, removal of toe nail, and circumcision; for Dr. D. C. Oreutt for operation on the nose and ear; for Dr. Casey Wood for an operation on the eye; for Dr. N. M. Eberhardt for hemorrhoids; for Dr. Francis Buss for tonsillotomy; for Dr. F. H. Skinner for oral surgical operations. As I understand these gentlemen are present and will enter into the discussion of thispaper, I will leave it to them to give you their views on Somnoform. I also administer the anesthetic for preparing sensitive eavities in teeth, opening abscessed teeth, and for laneing abscesses, with the greatest sueccss. In order to ascertain the induction and available time, observations have been made officially at Bordeau School on five hundred patients unprepared for being anesthetized and chosen at random, the operation being carefully timed with a stop watch. With an average dose of $2\frac{1}{2}$ c.c. the average induction is 30 seconds and the average duration 73 seconds.

Advantage Over Nitrous Oxid.—According to one anesthetist, the induction of nitrous oxid is 73 seconds and the duration 24 seconds. showing that the induction under Somnoform is less than one-half that under nitrous oxid, and the duration is more than three times as long. Some operators with nitrous oxid use a nose inhaler, keeping the patient asleep until the operation is completed; but after I have been working from a minute to a minute and a half, owing to the excessive hemorrhage, which prevents operating with any degree of satisfaction, I prefer to allow the patient to wake up and get rid of the blood. I have no trouble to induce the patient to take the anesthetic twice or three times if necessary. For these reasons and others which I will not take time to mention, I have discarded my nitrous oxid apparatus entirely. Dr. Rolland found that, in experimenting on animals, when anesthesia had been pushed to its extreme limit, with intent to kill, that respiration ceased before the heart's action. When artificial respiration was resorted to, the animal speedily recovered. In some cases the animals had ceased to breathe six minutes before the heart stopped beating, giving ample time for artificial respiration. With the absence of asphyxia goes a total absence of cyanosis, the complexion remaining perfectly normal during the entire length of the anesthesia. There is no oxygen available in Somnoform, yet there is a striking absence of any cyanosis. I am inclined to attribute this to the very quiet respiration. During my experience with nitrous oxid I had quite a scare with two or three patients, one was an athlete, another was a trained nurse, and still another was a professional singer, all of whom were practicing deep breathing daily. In all three cases respiration ceased entirely. I was obliged to resort to artificial respiration, and, when about ready to give up hope, I succeeded in reviving the patient. I believe that with these deep breathers, nitrous oxid gas completely paralyzes the muscles of respiration. Only a few days ago a patient called to have a tooth extracted. I administered Somnoform. When commencing the operation, I noticed that he breathed the same as these other patients had, and was prepared to meet with the same unpleasant symptoms, but, to my surprise, they were lacking entirely. After the patient revived I asked him if he were in the habit of practicing deep breathing. He informed me that he was a daily visitor at the gymnasium where he practiced a number of deep-breathing exercises. From my observations I find that the safety of Somnoform lies in its exceedingly rapid absorption and its equally rapid elimination from the system, a very important matter in anesthesia, as there is no swelling of the tongue to impede the operator, and the relaxation of the muscles enables him to make full use of the time at his disposal.

Indications of Complete Anesthesia.—The ocular movements cease in about 20 seconds, the period of induction averages about 30 seconds, the duration of the anesthesia averages about 76 seconds. The anesthesia deepens after the removal of the mouth piece. Eyelids droop, pupils become dilated, soft snoring often ensues, usually complete muscular

relaxation, rigidity being the exception, conjunctional reflex generally lost.

After Effects.—There are scarcely any bad effects whatever. If any, they are due to inexperience on the part of the operator, such as administering an overdose of the drug, allowing the patient to swallow too much blood, permitting patient to leave the chair too soon after the operation, or performing the operation too soon after patient has eaten a hearty meal. Any of these things will produce nausea. One writer claims that these cases of nausea are on an average of 1 per cent. My experience has shown a larger percentage than that. I have also observed that patients will experience a feeling of nausea after abstaining from two or more meals before the operation. Somnoform is put up in two forms—a bottle of 60 grams containing enough of the mixture for from 16 to 18 anestheties, and in capsules containing from 3 to 5 e.c., for single administrations. I prefer the bottle, because I administer it so often, but I find that it deteriorates after standing for some time. I would advise the use of the capsules where one administers it only occasionally. Some writers claim that nitrous oxid can not be used under certain climatic conditions. In order to find out the effect of tropical climate on Somnoform, I took an outfit with me on a trip to Central America in 1905. On landing at Ceiba, a scaport town on the northern coast of Spanish Honduras, I was notified by the officials that all of the other ports were closed on account of the vellow fever, and their advice to me was to go into quarantine for the required time and get out of the country on the first steamer leaving port. Dr. Reynolds, the American surgeon, and some of the native surgeons were very anxious to have me try my new anesthetic, and were quite disappointed as well as I was that I was not able to do so. I was in Ceiba four days, but feared to experiment with it, as something might happen which would cause the officials to detain me in the country. I came back to North America, a sadder man, but no wiser in so far as Somnoform was concerned. Somnoform is being rapidly introduced in hospitals throughout the world, and has been used for many years in many wellknown hospitals in England.

In conclusion, I consider Somnoform the most valuable anesthetic for all minor operations, from the rapidity of its induction, its length of available anesthesia, and the possibility of administering it to all patients and without special preparation, from its pleasant effects, and from its safety, demonstrated not only by the investigation on its action on the nerve centers, also by a clean record of over 1,500,000 cases. I might state that I searched all of the medical and dental journals of this and other countries to secure the mortality of Somnoform, but was unable to find any. Since completing my paper, a journal came to my notice with an article written by one of our nitrous oxid specialists entitled "Nitrous Oxid versus Somnoform." He claims in his long search that he found three precious lives had been lost by the use of this "dangerous drug," as he called it. As he did not give the mortality of nitrons oxid gas I will finish his article by stating that some authorities give nitrous oxid, 1 to 25,000, while others give 1 to 50,000. If these 1.500,000 patients had taken nitrous oxid gas instead of Somnoform. 30 or 60 precious lives would have been lost instead of the 3.

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JUNE, 1906.

THE SPRINGFIELD SESSION.

The fifty-sixth annual meeting of the Illinois State Medical Society which convened at Springfield on Tuesday, May 15, was by far the best and largest meeting the Society has ever had. Secretary Weis estimated the number in attendance at between six and seven hundred, and. while this figure may be a little high, yet it is undoubtedly true that more medical men attended the sessions of the State Society than ever before. The program embraced 90 papers, which were not, however, all read, but it is undoubtedly true that a greater number of papers was read than at any previous meeting, and the character of the contributions was exceptionally high. Probably the most gratifying part of the meeting was the good fellowship which existed. An animated debate occurred in the House of Delegates with reference to an increase of the number of eouneilors for the third district, but so good natured was the assembly that no hard feeling whatever resulted when an adverse vote on this proposition was given. The matter of the Medical Defense Fund was agreed upon unanimously, and it only remains now for the local Society to take up this matter courageously and industriously to make it a great success. A movement was started which will undoubtedly result in the introduction of a bill at the next meeting of the Legislature to regulate the manufacture and sale of patent and proprietary remedies. The tubereulosis question was thoroughly eanyassed, and this matter will again be brought to the attention of the general assembly.

The matter of life insurance fees was also taken into consideration, and the State Society went on record as being against a reduction on the part of the old-line companies.

In the Surgical Section steps were taken to bring the attention of the Society to the necessity of educating the people in regard to the cancer problem. This action was taken too late to be acted upon by the last general session, but it will be brought up at the next annual meeting. An unusual feature of the session was the clinics held at the hospitals for diseases of the ear, nose and throat. The great interest attached to this feature we hope portends a change in the Society meetings in the near future by which the clinic feature will be brought into deserved prominence, and practical demonstrations of an educational nature will take the place of formal papers and discussions. The State Medical Society can learn the lesson and profit from the sessions of the State Dental Society. The dentists of Illinois come together annually for a four days' meeting, with morning, afternoon and evening sessions, and at least two-thirds of the time is given to clinics which are not at all limited to the professors of the dental colleges. Any dental practitioner in the State who has discovered an improvement in any dental operation has the opportunity of submitting it to his colleagues at the annual session, where it can be commended or criticised as its merits deserve. Of course, it will not be quite so easy for the medical men of the state to carry on clinics, but undoubtedly a great deal more can be done in this connection than has been done in the past. The social features of the meeting, embracing a reception by the Governor and wife at the Executive Mansion and a picnic lunch, concert and vaudeville entertainment at the park, were especially enjoyable. Members and their wives to the number of about 450 attended the park entertainment, and a photograph of the assembly was taken on the steps of the casino. The interest extended through the third day, and more auditors listened to the papers on Thursday than is usual on Wednesday, which has heretofore been considered the big day of the annual sessions. Another important step was taken when the topics were divided into subjects especially interesting to medical men to take up one day, subjects interesting surgeons another day, and subjects of a mixed character for the third day. We may not have mentioned everything that occurred at this meeting, but from the short review above given it will be seen that the session was replete with interest and that the Society is in better condition at present and with greater prospects of growth than ever before. The fifty-sixth annual meeting will, therefore, be remembered with great pleasure by all those who attended the sessions.

A STRONG FACTOR IN ORGANIZATION.

The Springfield session of the Illinois State Medical Society was, perhaps, the most successful ever held. By far the most important action taken at this meeting was the adoption, by the House of Delegates, by a unanimous vote, of the system of medical defense proposed by the Committee appointed two years ago. It is a matter of congratulation and pride that the Illinois State Medical Society has been among the first of the State Associations to adopt a uniform plan of defense, embracing and protecting every member of the organized profession in the state. We do not hesitate to predict that this will prove to be the most

potent act for the completion of organization and the unification of the profession throughout the state that has ever been inaugurated by the State Society. It is now three years since the Chicago Medical Society introduced the feature of medical defense as one of the advantages of membership. The experience of this society has proven beyond a doubt that co-operative protection against malpractice and damage suits is the strongest argument that can be presented to the individual physician to induce him to become a member of his local medical society. Not only does the introduction of this feature mean increased membership and greater promptness in the payment of dues, but it also means a community of interest, a co-operation and a solidarity never before possible. It has been abundantly demonstrated that 90 per cent. of all malpractice and damage suits against physicians originate in the activity of some members of the legal profession, who work up these cases upon a contingent fee basis. The lawyers who do this kind of work generally possess more shrewdness and knowledge of the weaknesses of human nature than they do reputation and standing in their profession. They know full well that the average physician is rarely threatened with damage suits and that the average lawyer has had little or no experience in their management. When they find that, instead of having one member of the profession and a hastily prepared and illy-equipped lawyer to fight, they have opposed to them the organized profession of the county and state represented by an adequately paid lawyer who is able to devote his time to this case; it usually happens that they advise their clients to withdraw their suits, as there is no prospect in view except the possibility of having the court costs assessed against them. The result is that the only cases left for the committee on medical defense to handle are those in which there is a real basis for action or where the plaintiff honestly believes he has cause for action. Such cases can almost invariably be settled out of court in a manner that will prove an actual saving in money to the physician, to say nothing of the saying in time and labor.

If the medical defense plan proves as potent a factor in bringing new members in the state as it has in Cook County (and there is no reason why it should not) two years from now should sec a state society of seven thousand members, including practically all of the reputable members of the profession in the state. The Illinois State Medical Society has never undertaken a work of greater importance than this. The experiment will be watched with great interest by all of the other state associations. If it is successful in Illinois, it will be quickly taken up by our sister associations. The management of the fund and the conduct of the work is to be in the hands of a committee composed of one member from each county society in the state. These men should be selected with the greatest care. Each county society should be sure that the member selected to represent them will be active, diligent and untiring in his efforts to conduct this work so that it may redound to the benefit of the state society as well as to each county society and every member thereof. If the experiment is successful, in a few years the State Society will be in a position to undertake other lines of work, such as the payment of court costs or of damages following suits against its members or the establishment of a central business bureau for conserving the business interests of its members. Much depends upon the men in whose hands this work is placed. It is to be hoped that each county society will fully consider the matter and will select its representative with care and foresight.

THE APRIL MEETING OF THE COUNCIL.

The council met at Decatur, April 5, 10 a.m., and continued in session until 5 p.m. There were present Councilors Ensign, Will, Harris. Stealy, Mitchell, Barlow and Weis. Councilor Barlow reported that there had been no new developments in Champaign County respecting the conflicting societies existing there. Secretary Weis reported having issued a charter to Randolph County and presented an application for recognition as a component society of Moultrie County. After some discussion on the question of errors and duplication of names on the mailing list it was moved and carried that the secretary take charge of the mailing list and correct the same every month.

It was moved by Black and carried that the secretary be instructed to drop all names from the mailing list who are not paid for, as defined by the by-laws, and not to add any new ones that are not accompanied by the per capita tax. It was moved and carried that all new members accepted by the society in the first six months of the year must pay in full for the year and the second six months, one-half the amount. Dr. Black presented the following resolution:

"Resolved, That it is the sense of the council that under our constitution and by-laws no one can be accepted as a local member of his county society who does not at the same time become a member of the state

society."

Dr. Black presented his report on management of the Journal and the same was received and placed on file. Dr. Will presented expressions by the members of the Peoria City Medical Society of commendation and satisfaction on the improved appearance of the Journal.

Adjourned. E. W. Weis, Secretary.

TO SECRETARIES OF COUNTY SOCIETIES.

All officers and members of county societies, and especially councilors and county secretaries, are earnestly requested to report at once any changes of address or location of members of their county societies to the secretary of the State Association, without delay. Prompt reports regarding the election of new members and the election of officers of county societies are especially requested. It is only through reports received from county secretaries that the secretary of the State Society can know of changes taking place in local societies. For the proper transaction of the business of the organized profession throughout the state, it is absolutely necessary that correct and up-to-date information be had regarding all physicians, and especially all members of county societies. secretaries have already been provided with suitable cards for making such reports. Each secretary is urged to advise the state secretary at once regarding any such changes. Address all reports and communications to Dr. E. W. Weis, Secretary of the Illinois State Medical Society, Ottawa, Illinois.

CRITICISM OF ADVERTISEMENTS.

Illinois Medical Journal, Springfield, Ill.

Mr. Editor:—I notice in your issue for January (page 65) a statement that several questionable advertisements have been dropped. If you have dropped any that are worse than some I find in that issue I am glad I never saw them. For instance, Listerine, Uriseptin, "Liquid Peptonoids," Stovaine, Vitogen, Guaiatonic, Antiphlogistine, Glyco-Thymoline, Probilin Pills, Thermosa, Pepto-Mangan ("Gude"), Gray's

Tonic Comp., Hematone, Zematol, Phenol Sodique, etc.

If it is possible to get a filthier brood than that I should like to see the buzzard that could hatch them. I suppose there are some good reasons for carrying them. but I can't understand them. I am very much interested in The Journal and should be glad to see its advertising pages cleaned up. If it can't live without such advertisements I am willing that it should die. I am further willing that an assessment sufficient to run The Journal without them shall be levied on the members. I'll pay my part without a murmur.

Please send me a copy of the constitution and by-laws and also the

code of ethics of the state society.

If I have written a little harshly I beg your pardon, for I am terribly in earnest about this matter. Yours very truly,

Paris. W. J. J.

PECULIAR SUIT FOR DAMAGES.

To the Editor Illinois Medical Journal, Springfield, Ill.

Dear Doctor:—In the news items of the A. M. A. Journal there is a statement that I was sued by a person for performing an unnecessary operation and mutilation of the body, and damage of one dollar was obtained in Judge Gary's court. This appears to read that, in other words, it was a malpractice suit, which it was not. It was for a partial autopsy I performed. Permission was given by the older brother for a postmortem examination, and only a very superficial examination of the wound (which was for an appendicitis operation) was made, but the mother of the dead man had not been asked, and the slight extension of the wound in the abdomen was told her by other members of the family, and she was induced by some attorneys to bring suit against me and the hospital, and damages of one dollar was given by the jury. I merely relate all this so that you will not be misled by the item to give it further publication in the Illinois Medical Journal as if it were a case of malpractice.

I believe the court erred in the case, but I can not afford the time to appeal it for the one dollar, but the principle is wrong. The man was 28 years of age and only lived at times with his widow's mother and the brother who came to the hospital frequently and took charge of everything in the funeral and had a right to give permission for the postmortem examination, but the law seems to be that right only exists in one of the parents, and this old woman thought, I suppose, there was a chance to get out of paying for the surgical services. Not an organ was removed from the body, and the wound in the abdomen, which was previously about 5 inches in length, was only extended $2\frac{1}{2}$ inches further and an examination (postmortem) with the fingers made. It was the first case of its kind that ever came before Judge Gary, and he has been on the bench for about 40 years. Yours,

COUNTY AND DISTRICT SOCIETIES

CHICAGO MEDICAL SOCIETY.

A regular meeting was held April 4, 1906, with the president, Dr. Charles S. Bacon, in the Chair. The following papers were read in the symposium on "The Prevention of the Acute Infectious Diseases":

- 1. "The Sources of Infectious Agents, and the Ways and Means of Infection," by Ludvig Hektoen. (See p. 578.)
- 2. "The Rôle of the Fly and Other Insects in Infectious Diseases," by Dr. Alice Hamilton. (See p. 582.)
 - 3. "The Prevention of Typhoid Fever," by Dr. E. O. Jordan.
 - 4. "The Prevention of the Acute Eruptive Diseases," by Dr. Wm. L. Baum.
 - 5. "The Prevention of Pneumonia," by Dr. Robert B. Preble. Adjourned.

DISCUSSION OF THE SYMPOSIUM ON THE PREVENTION OF THE ACUTE INFECTIOUS DISEASES.

Dr. Heman Spalding was ealled upon to discuss these papers. He said: "I did not hear all of Dr. Baum's paper, but what I did hear I am willing to endorse. Dr. Baum has had excellent opportunities to see cases of infectious diseases, and is a man of experience for that reason.

With reference to the rules of the Department of Health governing the period of isolation in cases of infectious diseases, I will say that at the time the rules were made it was a common occurrence for a physician to eall for disinfection of premises after so short a period of isolation as one or two weeks. Four weeks was given in the department eircular as the shortest period for isolation in cases of scarlet rever. This is, I believe, a safe period in some mild uncomplicated cases, though I agree with Dr. Baum that six weeks is certainly safe.

The following is the department rule in regard to scarlet fever: ."Complete isolation should be enforced till all desquamation, or scaling off of the skin is completed, and there is entire absence of discharge from ears, nose, throat, suppurating glands, or inflammation of kidneys. The time required for scaling will vary from four to eight weeks. Mild cases, in which scaling is not noticeable, with absence of ear, nose, throat, kidney and glandular complications, should be isolated not less than four weeks. In severe cases, not less than six weeks should be the period of enforced isolation, and if ear, nose, throat, glands, or kidneys are discased, prolong the time of isolation until these are well."

If physicians will insist upon six weeks as the minimum time of isolation the department cannot object. A six-week's rule, will, however, be resisted in mild cases of scarlet fever, and some will break quarantine before disinfection is made, who could be easily restrained for the shorter period of four weeks. The period of time to isolate infectious diseases all hinges upon the question of how long the individual case gives off infection. This will vary in different cases. There is no doubt in my mind that some mild eases of scarlet fever, free from eomplications, can be made safe in four weeks. To make the minimum period of isolation six weeks would entail a hardship on a certain few families, and thus create dissatisfaction and a rebellion against the department for being unnecessarily rigid in restricting their liberty.

I wish to say a few words in reference to the practice of the Department of Health, to which Dr. Baum has objected, of allowing physicians to assume the responsibility in cases of infectious diseases. Personally, I never approved of the

practice. I was opposed to it. I argued against it, and yet the men who established that practice have the best of the argument. They were men of experience in sanitary science and knew what they were doing. In defense of this practice much can be said. The plan of allowing physicians to "assume the responsibility" of enforcing precautionary measures against the spread of contagion from cases of infectious diseases attended by them was inaugurated in 1895. It resulted in a decided increase in the number of eases reported, and the number of premises disinfected. It did away largely with the antagonism of some of the medical profession who were offended at previous harsh and fruitless efforts to compel

reports of contagious diseases by prosecutions.

A comparison of the two eight-year periods before and during the operation of this plan, made by Dr. F. W. Reilly, Assistant Commissioner, in 1903, shows an actual increase during the latter period, of 147 per cent. in the number of cases of the contagious diseases reported; of 73 per cent. in the number of contagious disease premises placarded; of 400 per cent. in the number and of 600 per cent. in the area of such premises disinfected, and of 70 per cent. in the number of contagious disease funerals supervised by the department. Thus it will be seen that co-operation of the medical profession has been secured by the adoption of this practice. It is far better to have a written guarantee of a physician that he will enforce proper methods in a case of infectious disease, knowing that the eyes of the Department of Health are upon him, than to have cases hidden from the department, preventing any official effort at isolation.

Experience teaches that if a warning card is posted in all cases, physicians will be influenced by the afflicted families to refrain from reporting cases. This is notably the case in hotels and near business houses, where the posting of a card affects business interests. On the other hand, it is urged against this plan that unscrupulous doctors use the rule to acquire business, with no intention of enforcing precautionary measures. They assume the responsibility in any and all cases to which they are called, knowing that their orders for precautionary measures given to the family will be disregarded. They assume the responsibility in order to

secure business.

It often happens that a conscientious doctor will report a case and, knowing the family to be eareless or ignorant, request a warning card as the safest method of protecting the public health. The family, indignant at the posting of the card, dismisses the doctor and sends for another, who, to secure the business of the family, assumes the responsibility, acquires a new patient at the expense of a brother practitioner, and at the same time jeopardizes the health of the neighborhood. Again, it is not known by all that a physician is allowed to assume the responsibility in infectious diseases, and when a neighbor learns of the existence of a case and sees no warning card, he forthwith notifies the department of a supposed concealed case. A letter of explanation must be sent in reply to the complaint. This is a daily occurrence.

Since the policy of allowing the physician to assume the responsibility was put in practice, conditions have changed. The practice, itself, has been responsible for the education of the people in the matter of preventing disease. And this is a strong argument in its favor. Physicians have better posted themselves in the manner and methods of destroying infection and safeguarding the public against infectious diseases. A compensation ordinance has been passed which gives the physician a small fee for each infectious case reported. This compensation makes reporting all eases legally binding upon physicians. The Chicago Medical Society has become a large and active organized body disseminating information to the public. Owing to these improved educational conditions, it may be that the practice of assuming the responsibility can with advantage be abandoned. An expression from members of the society upon this subject is desired.

Dr. L. A. Derdiger:—The author of each paper has presented his subject in such a masterly way to-night that there is very little to say. However, it occurs to me that Americans have a reputation in foreign countries of not practicing

preventive medicine, but of aiming to effect a cure after the disease has taken

permanent hold of the patient.

Last week, by chance I met a Japanese medical man who is the editor of a medical paper and in inquiring of him something of the practice of medicine in their country he informed me that they teach preventive medicine instead of teaching how to cure disease as we do. I was surprised, in a way, and yet I was not. I asked the doctor if he had investigated our medical schools in this country. He said, "Yes." I said, "Have you taken any courses?" "No." "How have you investigated them?" He said, "I have attended lectures in your medical schools, and your teachers lay more stress on materia medica, pathology, and bacteriology than on preventive medicine." I said to him, "Please tell me what your ideas are on preventive medicine?" To make a long story short, he said, "We teach, in the first place, our freshmen and members of the senior class to expel fear. To go into a sick-room when they are called, and be just as quiet and conservative about telling a patient what his trouble is as can be." I said to him, "Doctor, that is a good point. But we have the same thing here. We teach that, too, and even among our nurses."

Dr. Preble laid stress, at the conclusion of his paper, on the point that the best way to prevent pneumonia is to take in all factors; to keep our minds and bodies as free from excess and all of the things that tend to produce disease as possible. It is certainly a great pleasure to say these few words by way of calling attention to that. In America, we have earnest, ardent workers along scientific lines, which means mind as well as physique. There are men and women here who take an unselfish interest in scientific work, and we teach preventive medicine as well as the Japanese. First, with reference to Dr. Baum's paper, I would suggest that every member of the Chicago Medical Society indorse the plan of building two hospitals in Chicago for the earc of the poor who are suffering from exanthematous diseases. Those afflicted with scarlet fever should not be permitted in public places without a physician's certificate certifying that at least one week has expired after the exfoliation ceased. Every child should be thoroughly examined before entering school, whether it has been ill or not. Many young lives have been ruined by careless parents or physicians allowing the child to attend school during a period when rest of body and mind was most essential, instead of cramming and confinement, to say nothing of the underfed and illfed children who ebb out their young existence. We can imagine the results. It may mean migraine, chorea, neurasthenia, hysteria, defective vision or hearing, or a physical and mental wreck. Here is the right place to begin to teach and practice preventive medicine. With reference to Drs. Hektoen and Hamilton's papers, we can only express our gratitude at having this opportunity to learn from the master and his skilled pupils the methods of studying preventive medicine scientifically, and how to apply it practically. I trust that the Chicago Medical Society will be a stimulus for men and women of scientific tastes to follow in the footsteps of the masters and present us occasionally with such definite and very useful ideas on preventive medicine as has been heard here this evening.

Dr. Samuel J. Walker:—It is well-known among all of us that the contagious and eruptive diseases are most prevalent among children. Furthermore, that the public schools are the source of the spread of these diseases more frequently than any other one center. The prevention of contagious and eruptive diseases is extremely important, and I think what Dr. Baum has said about laying down arbitrary rules as to the length of time children suffering from any eruptive or contagious disease shall be kept out of school should be taken up in some more definite and practical way than it is at present. All of us have had instances brought to our notice of children who have returned to school, either in the desquamative stage of searlet fever or with Klebs-Loeffler bacilli in their throats after an attack of diphtheria, or still carrying the contagion of measles. This is not at all uncommon. It is the case, not only in our public schools, but in

our private schools, and the reason for it, in the majority of cases, is that the physicians in charge of the patients are not careful enough.

Dr. Baum has said that when an eruptive disease appears in one of the public schools it seems to stay with that school throughout the school year, occurring in sporadic cases throughout the year. The cause for it is simple enough. In a case of scarlet fever four weeks is not a sufficient length of time to keep a child out of school; six weeks is short enough, and in many cases it is not long enough. The same may be said with regard to measles. If we make arbitrary rules providing for periods of isolation for the various contagious and eruptive diseases, let us make the isolation long enough to protect other children, especially in the schools. I think this is very important. All of us who have children, and take care of children, see the importance of this all the time. It is very discouraging and very hard upon other children who are going to school, as well as hard upon their parents, when the necessary isolation period is not strictly enforced and contagion results. I sincerely hope that the time is soon coming when children who have infectious or contagious or cruptive diseases will be kept out of school the proper length of time, so as not to needlessly expose others.

Dr. A. W. Bacr:—I wish to refer briefly to that part of Dr. Jordan's paper in which he spoke of walking cases of typhoid. We know that most of the trouble is in the lower bowel, and that is where the disinfection is required the most. One of the best disinfectants I know of is a solution of ehlorinated soda, of the pharmacopeia, used as an enema, one or two ounces to the pint or quart of water, for those typhoid cases with loose bowels.

Dr. Alfred C. Cotton:—I regret very much to hear Dr. Preble say that there is no use in attempting to disinfect the upper air passages because we could not sterilize the nose, ctc. One might almost use the same argument and say that we should avoid keeping these passages clean. He knows that the upper respiratory tract should be cleansed. At any rate, efforts should be made to remove the desiccating secretions which harbor pathogenic organisms. Most of us have seen good results, prophylactically, as far as we can estimate, by proper applications to the upper respiratory tract, or to the rhino-pharyngeo-faucio-oral mucosa, and the use of a tooth-brush with mildly antiseptic solutions, and I believe these are just as popular with Dr. Preble as with anyone else.

Dr. Ludvig Hektoen:-There is evident need for a revision of the rules of this city governing the isolation of patients who have eruptive diseases; but whether to establish an arbitrary rule that isolation in all cases must last a certain time or to isolate patients so long as we have reason to believe that they are infectious, is too important a question to be decided offhand. In many parts of England patients with scarlet fever are not isolated any longer than until desquamation has vanished fairly well, provided there is no abnormal discharge from the nose, from the throat, or from the ears. The impression is growing that in post-scarlatinal abnormal discharges, rather than in the late desquamation, lies the great danger of infection from searlatinal convalescents. It is quite impossible, at this time, to go into all the details in connection with rules and regulations that should govern the readmission of children to schools. That there is need for thorough revision is clear, and it goes without saying that the final word in all cases should be spoken by the public health officials, rather than by the family physician. The question as to when a person who has had diphtheria should be allowed to go back to school is a difficult one to answer in many cases. We know that one examination of the throat may show that the diphtheria bacilli have disappeared, but, if another examination is made a few days later, diphtheria bacilli may be found in the same throat. So the question is not so simple as it might seem to be, and I do not think it can be settled satisfactorily by arbitrary rules. This, like other similar questions, requires careful consideration by public health experts, in co-operation with practicing physicians.

I wish to make one point in reference to pneumonia. I believe with Dr. Proble that the sputum in pneumonia should be disinfected, because we know that in

pneumonia, the pneumococci present, in the laboratory experiments that we can make with them, distinct evidences of newly-acquired virulence for animals and resistance toward phagocytosis in vitro, that is not characteristic of pneumococci that may be isolated from practically everybody's tonsils. For this reason, it seems to me, it is indicated that great care should be taken in the disinfection of the sputum of pneumonia patients, and in preventing pneumonia patients from disseminating droplets of saliva and mucus in such a way that they may be taken directly into the respiratory tract of other individuals.

Dr. Baum's appeal for the erection of hospitals for contagious diseases in different parts of the city must, of course, find a hearty response in each one of us. It may not be out of place to emphasize again that recent action of the City Council has prevented the erection of one hospital of this sort within the last year or two, and as the ordinance governing the location of such hospitals now stands, it is practically impossible under ordinary conditions to secure the establishment of such hospitals. Certainly, the medical profession of the city should unite in overthrowing a needless hindrance like this to progress in the prevention of infectious diseases.

Dr. William L. Baum:-My reason for speaking of an arbitrary minimum period of isolation of scarlet fever cases was because, as the matter now stands, it is largely left to the discretion of physicians, many of whom in the past have yielded to the importunities of the parents of children who have suffered from contagious and eruptive diseases, whom the parents were anxious to have return to school as early as possible. A period of six weeks is not too long, and I am sure it would cover a large per cent, of those who would be a menace to other children, and who are constantly keeping up this endless chain of scarlet fever cases, diphtheria, etc. We know that many of these patients who have been given their discharge at the end of four weeks or so, as a rule, have other complications which necessitate their detention at home for longer periods of time, so that the danger of their returning to school is not quite so great as it is amongst the milder types of the disease. In this connection, I might say that this afternoon I examined a little girl who, when she was admitted to the hospital, had a temperature which was never over 99°. For four weeks she showed no signs of desquamation, but on the thirty-second day she was discharged by an interne because she showed no signs of desquamation. On the fourth day after she was discharged she returned with desquamation; so that it does not always necessarily follow that on account of long absence of any symptoms of desquamation the disease will not occur in that case. It is such cases that are in a measure dangerous to the community at large.

Dr. Preble (closing the discussion):—With reference to what Dr. Cotton has said, I wish to say that I make a clear distinction between cleanliness and sterilzation. It is altogether a different proposition to use douches or sprays for the purpose of removing accumulations of mucus, but it is the constant, persistent use of these, with a view to sterilizing the upper air passages, that I object to. I quoted from an authority upon the prevention of pneumonia and sterilization of the upper air passages, and of the oral cavity, who takes the ground that sterilization and disinfection of those passages were absolutely impossible. To use douches and sprays for purposes of cleanliness is a different thing. Dr. Cotton and I have used them for that purpose, but he does not use them with the idea of accomplishing anything in the way of sterilization of those passages, because he knows it cannot be done.

A regular meeting of the Society was held Wednesday evening, April 11, 1906, at 8 o'clock, with the President, Dr. C. S. Bacon, in the chair.

Dr. W. K. Jaques read a paper on "The Standard of Government Meat Inspections" (see page 587), which was discussed by Drs. F. S. Johnson, A. C. Klebs, W. M. Harsha, C. S. Bacon, and, in closing, by the essayist.

Dr. Sanger Brown read a paper on "The Early Symptoms of Multiple Sclerosis, with a Clinical Report of Four Cases."

Dr. Charles A. Elliott read a paper on "The Gram Stain of the Stools as a Method Applicable in the Diagnosis of Careinoma of the Stomach," and demonstrated a number of microscopic specimens.

Dr. C. M. Paden read a paper on "Somnoform Anesthesia" (see page 595), which was discussed by Drs. Hawley, R. H. Brown, N. M. Eberhardt, C. S. N. Hallberg, Bloch, and Higgins.

DISCUSSION OF DR. JAQUES' PAPER.

Dr. F. S. Johnson:—This paper is certainly of great interest to us from many standpoints, but particularly from that of hygiene, for on this the merits of the question rest. Dr. Jaques has aptly said that if all meat was sterilized there would be little reason for condemning it, but all meat is not sterilized. Much is eaten underdone, and some is eaten raw, especially by eonvalescents-a particularly susceptible class-and by consumptives, who may thereby infect new areas. There can be no question, then, as to the advisability of avoiding tuberculous meat. There is also the legislative standpoint; a law of the kind in question, framed to furnish protection, is practical only in so far as it provides efficient inspection and deals positively with the disposition of unsound meat. The law should be direct in its mandates and unembarrassed by equivocal clauses. The esthetic side also claims attention. Even slightly diseased meat can not be regarded as food without disgust. The subject is of interest to us not only as individuals, but in its eivie, state and national relations. We should be sufficiently interested in the proper conduct of the affairs of our city to determine safe and proper boundaries for them, and when, through lax laws, questionable meat is allowed to be marketed for food it should be a matter of serious concern to us, for we thereby assume a share in the responsibility for the sale of such meat. Dr. Jaques deserves a great deal of eredit for bringing this matter to the attention of the profession, and because of his past aequaintance with the limitations of the law, and the difficulties in securing efficient inspection through it, he ought to be well able to inform us in this matter.

Dr. A. C. Klebs:-I had never before quite realized how great was the number of eareasses which were destroyed by the Health Department on account of tuberculosis. Whether meat from tuberculous animals is fit for consumption is a much discussed question. In most instances it is cooked. Rumpel found it to be as well utilized in the dog's intestine as normal meat and Kutscher only observed its more ready putrefaction in the intestine as compared to that from healthy animals. But there are plenty of good reasons why we should have a right to demand that our meat supply should not be derived from infected animals. The meat inspection laws in Germany seem to be a good deal stricter than those just read. For instance, if one lymph gland is diseased, the corresponding part of meat is considered unfit for food in every case. If I understand it correctly, the laws read by Dr. Jaques apply only to beef used for export and the packer has a right to dispose of eareasses, condemned, provided they are not shipped out of the country. I should like to ask Dr. Jaques what becomes of such condemned meat which is returned to the packers.

The question of identity or non-identity of the human and bovinc bacillus is by no means settled. There is, however, an agreement between the two contending parties, whose chief representatives are Koch and Behring. Koch said, in 1901, at the Tubereulosis Congress in London: "Considering all these facts, I think I have a right to assert, that human tuberculosis is different from bovine tuberculosis and that human tuberculosis can not be transmitted to cattle." Behring said in 1903: "Those authors who declare in opposition to Koeh, that the typical virus of human tuberculosis and the typical virus of cattle tuberculosis are essentially identical, are certainly in the wrong, just as in the same way they would be wrong in declaring as identical all the varieties of tuberele bacilli originating from man." Therefore, we may conclude that the mere academic question remains whether the two types of bacilli are congeneric or not. For practical and preventive purposes, we must use the same safeguards against

the one as against the other.

In the discussion of this question of beef condemnation we are apt to loose sight of one point entirely, viz., the tremendous financial drain on one of the most valuable sources of our national prosperity. It is a shortsighted policy for us only to consider what we shall coudemn and what not. We ought to go to the root of the evil, to the farms where this tuberculous meat is produced. And in this respect we come to a problem vastly more important to the public health, i. e., the milk supply. What we do for the betterment of the one will improve also the other. Bang, of Denmark, has shown that by artificial feeding and segregation of new born calves, a herd can be cleaned of tuberculosis within five years. With the tuberculin test we also can segregate the adult tuberculous animal from the healthy ones and there is no doubt that, by a systematic, businesslike application of these experiences here, we can save thousands of dollars within a short time, while now we destroy them in the tanks of the stockyards. Von Behring's method of immunizing cattle is also available now, having issued successfully from the experimental stage. In one sentence, we must teach the farmer that it pays to prevent, then the stockyards problem will become comparatively simple.

crument service since 1896. I began service in Kansas City on the eattle beds and was transferred to Chicago in 1904. As to the disposition of the condemned careasses. While the rules quoted by Dr. Jaques are correct, yet they are hardly necessary to control the packers in the matter of the disposition of carcasses. It would be very detrimental to their business to ask for these carcasses and they never object to their being tanked.

Dr. W. M. Harsha:—It was a revelation to me to hear that the government permitted the use of eattle infected with tuberculosis in as many as three places or groups of lymphatics. The doctor did not tell us whether these rules are made by congress or are an arbitrary ruling of the commissioner or of the inspection department. It certainly seems to be rather lax. In addition to that, it is wrong to give to the inspector too much discretionary power. The statement of the last speaker is more to the point; that the self interest of the packer stands in the way of his using this condemned meat. At the present time that, after all, is the greatest safeguard we have against the distribution of tuberculous meat.

The doctor's paper did not deal with milk, but the remarks of Dr. Klebs in that connection were quite appropriate. The place to purify a stream is at its source. If tuberculous carcasses could be tagged, so that each one could be traced to the farm from which it came, it would have its effect on the producer. If, in addition to that, the inspection is made of the herd, we will not only save the expense of raising the cattle, but we will save the children who are destroyed annually through the milk.

I saw some statistics from England and Wales recently, showing that, in general, tuberculosis has decreased at all ages, 45 per cent., while among infants, one year old or less, it has increased over 20 per cent., showing that in children of the milk eonsuming age there is a very large increase. That would not indicate that the inspection in these countries is any better than our own. However, the place to inaugurate the inspection is in the herd, and the tuberculin test is conceded to be a good diagnostic agent for this purpose.

Another point I did not get enlightenment on is whether these inspectors are civil service employés and whether they have any special training fitting them for this work. The action of medical societies does not influence medical or general legislation, but it does create a public sentiment. This is important, but we must go back of the stockyards to where the cattle are bred if we wish to reach the real source of the trouble.

Dr. C. S. Bacon:—I would like to ask Dr. Jaques to tell us whether he understands that the pure-food bill that has just passed the senate and is now before a committee of the house will have any bearing on this matter of government inspection of meat. This matter will come in under the head of adulterated foods, as described in section 6. I also notice that examinations are to be made

by the Bureau of Chemistry, and I wondered whether this would make any difference in the status of inspection. The pure-food bill has been endorsed by this society, as well as by the American Medical Association, and I am curious to know whether the bill will have any tendency to produce better inspection of meat.

Dr. Jaques, closing the discussion:—I do not believe it was intended that the pure-food bill should affect the present method of meat inspection. I am very glad to say that whatever experience I have had with government meat inspectors and their methods of working has demonstrated that it is perfect as far as it goes. The questions which I wished to raise are these: The rules which govern these men are unjustifiable. Are we willing that these different grades of tuberculous and actinomycotic meat shall be disposed of in the manner prescribed? The best men to discuss this subject are those in the medical profession and that is my reason for bringing the matter before you. With regard to Dr. Klebs' question as to the actual disposition of the meat, that would take a long time to explain and discuss in all its bearings and I must refrain from doing so at this time.

DISCUSSION OF DR. BROWN'S PAPER.

Dr. Charles L. Mix:—We have been taught that multiple sclerosis is to be diagnosticated when we find the symptoms of nystagmus, scanning speech and intention tremor present. This picture has prevailed in all textbooks, but it is not a correct portrayal of the majority of cases of multiple sclerosis. In addition to the article by McKintosh quoted by Dr. Brown, there have been two other notable contributions to the literature of this affection in the last two years; one by Mueller, Struempel's assistant, based on eighty cases, and another by Morawitz, from Krehl's elinie at Tübingen, based on thirty-three cases. In both these articles, the early symptoms of multiple sclerosis are described in the same way. Invariably the symptoms begin as a spastic paresis of the lower extremities. The patients complain of clumsiness in the legs, and of a feeling of heaviness and weight. Very shortly after these symptoms appear, sometimes concomitant, sometimes preceding, are symptoms of paresthesia like those occurring in locomotor ataxia. The knee-jerks are exaggerated. There is no true Argyl-Robertson pupil, but only a slightly dilated pupil that may not react to light. Sometimes there may be hyperesthesia or even anesthesia for all varieties of sensation. There is not the dissociation symptom that occurs in syringomyelia, but there is a reduction of all forms of sensation as in locomotor ataxia. The pain sensation may not be involved particularly.

There may be ataxia. A large variety of these reported cases, twenty out of eighty, began with a slight ataxia and many showed a combination of ataxia and spastic paresis. The ataxia or the tremor is not necessarily confined to the legs, They may be found in the arms also. Another very early symptom which it used to be said did not occur at all in multiple sclerosis is involvement of the sphineters. This is always slight. There is inability to start the stream or inability to control it at the onset.

The modern teaching regarding this affection is quite the reverse of the old. The so-called characteristic symptoms do not occur at all in early cases. Nystagmus is present in only half the cases. Nystagmiform jerkings occur not infrequently, but not true oscillations. The seanning speech is the least reliable of all the signs; only 15 per cent. of the cases have this sign at all. As far as the intention tremor is concerned, it is present in 75 per cent. of the advanced cases, but in only 15 to 25 per cent. of the early cases. We have, therefore, to revise our ideas concerning the symptomatology of this disease.

Concerning the presence of the disease in this country, I think we shall find that it is more prevalent than we have thought. I think I saw a case to-day. A man was brought in who was using a cane. He said that his legs were clumsy and that they have been so for two years. They were weak, heavy, cold and numb. There was marked reduction of all three forms of sensation. Vision was dim, and there was a feeling of constriction about both legs. He also had a girdle sensation. The ocular reflexes were normal. The patellar reflexes were

increased, as were all the deep reflexes. The cremasteric reflex was present. In many of the cases, about 65 per cent., there is abolition of the eutaneous reflexes. The man also had a very slight intention tremor. If he held out his hand the tremor appeared for a moment, and then disappeared. I believe that case to be one of multiple sclerosis. It bears out the ordinary symptomatology of the everyday case, such as portrayed on the chart, exhibited by Dr. Brown.

GRAM STAIN OF THE STOOLS. A METHOD APPLICABLE IN THE DIAGNOSIS OF CARCINOMA OF THE STOMACH.

CHARLES A. ELLIOTT, M.D.

CHICAGO.

So far as is known to the writer, the credit for the idea that a Gram stain of the stools might aid in the diagnosis of carcinoma of the stomach belongs to the Neusser clinic, in Vienna, and is based upon the original work of the first assistant in the clinic, Dr. Rudolf Schmidt. Much original work has been done in the Neusser clinic upon the so-called "lactic acid flora" of the gastric contents in cases of carcinoma of the stomach, and Schmidt has summarized most of this work in an interesting article which appeared in the last number of the "Mitteilungen aus den Grenzgebieten der Medicin und Chirurgie" (15 Band, 5 Heft). Schmidt was the first to successfully cultivate upon a practical artificial medium (2 per cent, glucose agar) the so-called "lactic acid," or "Boas-Opler" bacillus of the gastric contents, in cases of carcinoma of the stomach, and it was by this means that he was able to identify the same bacillus in the stools of such patients. He found that these bacilli not only survive in the intestinal contents, in their passage through the gastrointestinal tract, but that in some cases they actually multiply to such an extent as to exceed the colon group in numbers in the stools, and in some cases, almost totally to supplant the latter.

Since the so-called "lactic acid" or "Boas-Opler" bacillus is Gram-positive, at least Gram-positive when young, and only becomes Gram-negative in part as it grows older, this stain affords a simple means of distinguishing these bacilli from the Gram-negative colon group, which usually predominate in the normal stool. This has given rise to the practical clinical procedure of staining smears from the stools of cases in which a carcinoma of the stomach is suspected, with the idea that such specimens may show a great increase in the bacillary Gram-positive elements, a point which might speak for a diagnosis of carcinoma of the stomach.

omacii.

The technique used is as follows:

I. Thin smears are made from the stool upon cover slips.

2. Dry, and fix for five minutes in methyl-alcohol, thus dissolving away the fatty substances in the smear which interfere with a clear stain.

3. Stain in anilin oil gentian violet for five minutes. Wash.

4. Treat the specimen with Gram's iodin, potassium iodid mixture, until it becomes a deep purple color. Wash.

5. Decolorize in 95 per cent. alcohol, until almost all color has disappeared. Wash.

6. Counter-stain in a weak aqueous fuchsin solution. Wash, dry, and mount.

The staining is best done in watch glasses, and a strong light is required in examining these specimens, since with a poor illumination it is difficult to distinguish between the violet color of the Gram-positive and the red of the Gramnegative bacteria.

Using the above method, the varying stools of a presumably healthy individual have been systematically and persistently watched during the past winter, and also numerous examinations of the stools of the ordinary run of cases in the medical wards have been made, especial attention being paid to the Gram-positive bacilli. For our purpose, the Gram-positive cocci, spores, etc., that occur in stools, are disregarded, and attention paid only to the bacillary elements.

In such "normal" specimens, one sees Gram-positive bacilli of all morphological varieties, large and small, thick and thin. As far as the proportion in

actual numbers of Gram-positive to Gram-negative bacilli is concerned, one may recognize a great variation, which is still within the normal range. In the normal stool, the Gram-negative colon group usually far outnumbers the Gram-positive elements, hence the normal stool is a "Gram-negative stool." In a typical "Gram-positive stool," as is often found in carcinoma of the stomach, one recognizes not only the numerical preponderance of Gram-positive elements, but also the fact that these bacilli are, for the most part, morphologically uniform.

One comes to look upon the uniformity in size and shape of the Gram-positive bacilli as a factor which is quite as characteristic of a typical "Gram-positive stool" as is the mere presence of a greater number of Gram-positive over Gram-negative bacilli. One may see normal stools in which the Gram-positive clements seem to be quite as numerous as, if, indeed, not more numerous than, the Gram-negative clements, yet here one finds that the great variety as to form and size of the Gram-positive elements is in great contrast to the uniformity which is found in the typical examples of Gram-positive stools.

Schmidt recognizes three types of Gram-positive stools:

1. "Lactic acid bacillus type." The bacillary Gram-positive elements are thinner than the colon bacillus, and vary greatly as to length, are without spores, and are non-motile. They show here and there areas in the bacilli which are Gram-negative. Upon staining such fresh specimens with Lugol's solution, the bacilli stain yellow and show granules here and there in the protoplasm of the bacillus. By this means, these bacilli may be identified without resorting to culture methods. They may be cultivated upon a two per cent. glucose agar. These bacilli have the same characteristics as the bacilli found in the coffee-ground stomach content of cases of carcinoma of the stomach, and their presence in the stools has the same diagnostic value as their presence in the stomach content.

2. "Pseudo-colon bacillus type." Showing bacilli which are morphologically the same as the colon group, but are, however, Gram-positive, and can not be cultivated. This stool picture occurs in catarrhal conditions of the large intestine, especially where the stools are very acid, i. e., a catarrh due to chronic

tubercular process, or a carcinoma of the intestine, etc.

3. Type of Gram-positive, plump, bacilli, in long chains. These bacilli stain blue with Lugol's solution, and can not be cultivated. The stool picture occurs in chronic catarrhal inflammation of the lower bowel, especially when associated with atony and flatulence. The "lactic acid bacillus type" (type 1) is readily to be distinguished from the other types by the morphological and tinctorial peculiarities of the bacilli, and it is this stool which is of especial interest in the diagnosis of carcinoma of the stomach.

During the past winter I have had the opportunity of examining the stools of twenty-five patients in which the possibility of a carcinoma of the stomach was especially to be considered, and in which the diagnoses were subsequently confirmed, either by postmortem, by operation, or by the subsequent course of the cases. Of these 25 cases, 17 showed Gram-negative, 6 Gram-positive, and 2 almost exclusively Gram-negative stools, as tabulated below:

	ber of cases.			Almost ex- ciusively gram, negative.
Carcinoma of stomach*	6	5	1	
Carcinoma of stomach	1	1		
Carcinoma of splenic region				
(not primary of stomach)*	1		1	
Renign stenosis at pylorus	4		4	
Galistones*	3		3	
Chronic gastritis	2		2	
Chronic gastric uicer*	1		1	
Acute gastric ulcer	1	1		
Cirrhosis of liver*	2		1	1
Perihepatitis and perigastritls*	1		1	
Myocarditis	1		1	
Pernicious anemia	1		1	
Chronic nephritis	1			1
•		-		
Totai	25	7	16	2

^{*} Diagnosis confirmed either at postmortem or by operation.

In the 16 cases showing Gram-negative stools, this fact was considered a point which spoke against the probability of a carcinoma of the stomach being present, and of this group only 1 case was a case of carcinoma of the stomach. Of the 7 cases showing Gram-positive stools, this fact was considered a point speaking in favor of a diagnosis of carcinoma of the stomach, and of this group 6 were carcinomas of the stomach, and 1 an acute gastric ulcer. The list contains 7 cases of carcinoma of the stomach, 6 of which showed Gram-positive stools (type 1), and 1 a Gram-negative stool. Two of them showed almost exclusively Gram-positive bacilli, i.e., the "lactic acid" bacillus seemed to have almost totally supplanted the colon group.

The case of acute gastric ulcer showing a Gram-positive bacillus stool flora also showed an exclusively Gram-positive bacillus flora in the vomitus. The bacilli of the vomitus seemed to be, morphologically at least, identical with the Gram-positive bacilli of the stools. They were rather short, plump, Gram-posi-

tive bacilli.

This case is of interest especially because it seems to point to the truth of the statement that the flora of a pathological stomach content may still be pres-

ent, and in some cases even predominate in the flora of the stools.

In the two cases showing an exclusively Gram-negative stool flora, this finding was considered to be a point which spoke decidedly against a diagnosis of carcinoma of the stomach. One of these cases was referred to Dr. William E. Morgan for operation, with a diagnosis of carcinoma of the stomach. The patient was vomiting persistently, and the passage of a stomach tube was out of the question. There were albumin and casts in the urine. A Gram stain of the stool was made, which showed an exclusively Gram-negative stool. This fact was considered a point which spoke decidedly against the probability of a carcinoma of the stomach being present. Dr. Morgan refused to operate, considering the gastric phenomena to be due to uremia, and the subsequent course of the case shows that his diagnosis was correct.

The second exclusively Gram-negative stool case was a case of cirrhosis of the liver in which the possibility of a carcinoma of the stomach was to be considered. The exclusively Gram-negative stool was considered to point decidedly against a diagnosis of carcinoma, and the post-mortem established the diagnosis

of cirrhosis.

Neusser goes so far as to say that one can exclude carcinoma of the stomach in cases showing an exclusively Gram-negative flora of the stools. Atypical Gram-positive stools, i.e., differing from the "lactic acid bacillus" type (type 1), may be found in other conditions than carcinoma of the stomach, as has already been indicated. According to Neusser, typhoid stools are often Gram-positive, and he relates a case of a Gram-positive stool being present in a greatly emaciated and cachectic woman who was suffering from a carcinoma of the uterus. Her stomach content showed no hydrochloric acid after a test meal. Schmidt considers the presence of a Gram-positive coccus stool, especially when the cocci occur in clumps, as an indication of an ulcerative process, such as, for instance, an ulcerating carcinoma, or a tubercular ulceration of the intestines.

In summarizing, I wish to emphasize the following points:

1. A Gram stain of the stools may throw considerable light upon the diagnosis of abdominal cases in general, and especially is this true where the diagnosis lies between a gastro-intestinal process, on the one hand, and a pathologic process occurring in some other abdominal organ, on the other. While a Gram-positive stool is in no way pathognomonic of carcinoma of the stomach, yet it very frequently occurs in this condition. The very limited number of these cases that have come under my personal observation, in which the diagnosis has been substantiated by post-mortem or operation, does not allow of a more definite conclusion than this, yet I feel certain that the presence of a typical Gram-positive stool (type 1) is a sign which may be used to advantage in establishing a diagnosis of carcinoma of the stomach, and especially in cases where the use of

the stomach tube is contraindicated. It is a good, simple, and practical example

of applied bacteriology.

2. Schmidt suggests that in cases in which an old gastric ulcer is known to exist, a Gram stain of the stools may be made from time to time, with the idea that when a carcinoma develops upon the site of the ulcer, it may manifest itself by a change in the stool flora, which would be detected by a Gram stain, and thus lead to an early diagnosis.

3. An exclusively Gram-negative bacillary stool, while uncommon, yet speaks

very decidedly against a carcinoma of the stomach being present.

DISCUSSION OF DR. ELLIOTT'S PAPER.

Dr. Parker:—There is a very practical side to this question. In the sixteen cases, there was no carcinoma of the stomach that could be determined more accurately by examining the stomach contents. In cases where it does occur, we must wait for stagnation, and that is a very late stage of the carcinoma and the hydrochloric acid has then long since disappeared and the chance for operation has passed. Of course, in the stagnation mass we find the lactic acid bacillus, and we may get it in a simple obstruction, and again, on the other hand, we may have obstruction of the stomach, with vomiting, much hydrochloric acid and therefore no Gram stain.

DISCUSSION ON DR. PADEN'S PAPER.

Dr. Clark W. Hawley:-I suffered for two years with nervous prostration and the only comfort I could get at times would be through the use of chloroform. So far as I could recognize there is no difference between the taking of somnoform and chloroform, except that anesthesia results more rapidly from the former. The odor and taste of the two are very much alike. I tried very hard to keep track of the sensations, but it was impossible. The feeling of falling asleep is so sudden that I realized no particular sensation, except the smell and taste. The coming out from under the anesthesia is very sudden and there are apparently no after effects. Quite recently I had a child, about eight years of age, to whom I hesitated to give a general anesthetic. The anesthesia from bromid of ethyl is so short that I knew it would be insufficient. The child had a large polypus in the middle ear, so situated that it was impossible to remove it under a short anesthesia. The tonsils were enlarged and there also were adenoids. I wanted to remove all these structures under one anesthsia. I had Dr. Paden give somnoform and I was very much pleased with the result. The operation on the ear took some little time. Then I removed both tonsils and the adenoids. I did not feel that I had to hurry. I went from one operation to the other without undue haste as would have been the case under bromid of ethyl.

The peculiarities I noticed in the giving of the anesthetic were that the anesthetizer was very little in my way. He just gave sufficient somnoform to keep the patient anesthetized. That is very desirable because the patient always gets some oxygen between whiffs. It seems to me that must relieve the dangers of giving an anesthetic. There is no cyanosis.

Another case in which somnoform was used was one of tumor of the neck. About the same thing was gone through with as in the previous case and with the same results. I believe somnoform is a most ideal anesthetic for short operations.

Dr. R. H. Brown:—I have had but little experience with somnoform. I was present during the operations Dr. Hawley mentioned. What I particularly like about the anesthetic is that it can be removed and given again repeatedly. I have been using bromid of ethyl considerably, but I consider it a very dangerous anesthetic. I have been afraid of it for a number of years. If, during its administration, the patient is allowed to get a few whiffs of air and the anesthetic is again used, serious results are likely to follow. I have given it three or four hundred times, and I have had five or six serious cases where the cyanosis was very marked and where respiration stopped entirely. I have had one death from bromid of ethyl. The respiration stopped first and the circulation immediately afterward, and although artificial respiration was kept up for a long time and

everything was done to stimulate the heart there was no effect. I have used somnoform in two cases of adenoids, and in both cases it was necessary to readjust

the gag, but it did not interfere with the anesthesia in any way.

I can, however, hardly accept the rosy reports of one and a half million favorable cases. I fear that, when all reports are in, we will hear of some fatalities, but that is also true of any other ancethetic. The inhaler Dr. Paden uses is a very complete one, but it has one defect, from the standpoint of a throat operator, and that is that the gag between the teeth must be entirely in the mouth, so that it gives us no chance to hold it outside. It is possible, however, that another form of gag can be used.

Dr. N. M. Eberhart:—There are many instances in office practice where it is necessary to subject the patient to an operation of not more than ten or fifteen minutes' duration, and that are not serious enough to warrant sending to a hospital. It is in such cases that somnoform is particularly useful. The patient can leave the office almost immediately after the operation, which is not the case with other anesthetics. In a case of hemorrhoids that I operated on some years ago, the patient had a heart lesion. At that time chloroform and ether anesthesia was used, but the heart lesion had progressed considerably, and, when I operated again a few weeks ago, I concluded to try somnoform, having first tried it on myself and being very much pleased with the result. The patient was anesthetized completely after about nine inhalations, and remained perfectly quiet during the ten minutes I operated. Before I could get my instruments out of the way the patient was ready to leave the office. I think it is an ideal anesthetic for these short operations. A second case, on which I had also operated previously, was a very nervous patient, who refused operation rather than take chloroform again. The patient was under the anesthetic (somnoform) about fifteen minutes and did not complain of any after effects.

Professor C. S. N. Hallberg:—I do not like the name "somnoform," applied to a mere mixture of ethers. There are a number of proprietaries with names quite similar, but entirely different in character. It would be well to have a more scientific name for this mixture. I would like to ask the doctor if he has tried anesthol, a preparation brought forward by Willy Meyer about two years ago, a mixture of ethyl chlorid, chloroform and ether. These mixtures appear to approximate the so-called A. C. E. mixture, and, if we compute the specific gravities of these various ether mixtures we shall find that they approximate the specific gravity of one. Any mixture which is made up of ether, which is exceedingly light, and an haloid ether like ethyl bromid, which is exceedingly heavy, will have a mean specific gravity of one. I believe that this has something to do with the volatility ratio of these mixtures.

For the same reason, employing a substance of high specific gravity like ethyl bromid, which is much heavier than chloroform, would suggest danger. Here may lie the danger in the use of such substances.

Dr. Bloch:—I have had occasion to use somnoform in about twenty-five operations, but I never used a gag, and the patient always went to sleep in half a minute. I have also used somnoform preliminary to ether or chloroform anesthesia and found it considerably more rapid than the nitrous oxid method. The longest period I have given the anesthetic was fifteen minutes, during which time a curettement was done and a few hemorrhoids were removed. I used only about 10 c.c. of the mixture.

Dr. Higgins:—I have given somnoform for operations on the eye with great success. One operation was an iridectomy, but I would never recommend somnoform for such an operation because the palpebral reflex is not lost completely and the eye does not remain still.

Joint meeting of the Chicago Medical Examiners' Association and Chicago Medical Society, held April 25, 1906, Dr. E. L. Hayford, President of the Chicago Medical Examiners' Association, in the Chair. Dr. Robert H. Babcock read a paper entitled "Chronic Myccarditis from the Standpoint of the Life Insurance Examiner."

DISCUSSION.

Dr. William J. Butler:-There are two or three points of special interest in Dr. Babcock's paper which need further comment. The one in particular that attracted my attention is with reference to the difficulty of determining the cardiac area in a corpulent man. There is more than the factor of thickness of the chest wall which interferes with this. In a corpulent man there is usually a greatly distended condition of the abdomen. The abdominal organs are more or less encroached upon, with a tendency to push the cardiac area upward and displace the heart. We have, likewise, in these fleshy men a more or less fatty layer over the heart, which is sometimes very considerable, especially over the right heart, invariably leading to considerable dullness under the sternum. Sometimes even to the right border of the sternum dullness will be found. These conditions undoubtedly are frequently responsible for the apparently large eardiac area in some of these corpulent men. The apex beat is too frequently wanting altogether as an index to the left limit. As a consequence, one must depend entirely upon percussion in many eases, which presents the difficulties already mentioned by Dr. Babcock. Before leaving the fatty layer which frequently overlies the heart in such a patient, I wish to call attention also to the influence of such a fatty layer upon the integrity of the heart itself. Where this is considerable, not infrequently there is infiltration or a tendency to infiltration of the cardiac muscle itself, and, as a result, two factors are operating in disturbing the integrity of the heart musele. Whatever arterio-selerosis may exist, in the eoronary arteries and its branches, and likewise the infiltrations of the fat that surrounds the heart, leading as it does frequently to parenchymatous changes, or to direct fatty changes, in such men not infrequently produce a slow pulse, which may be of high tension, dependent upon the degree of the arterio-selerosis that exists.

Another factor in these cases is that the heart sounds are often the most important in determining arteriosclerotic changes, where the same is not evident in the arteries. Attention has been called to this by Dr. Babcock. The second aortic sound, which is so characteristic of the arteriosclerosis, at once determines its presence. Concerning the murmurs that are sometimes heard, a heart that is put under pressure by physical exercise will sometimes develop murmurs. I am inclined to doubt, however, that these murmurs ordinarily indicate a relative insufficiency. If the heart chamber is put under the stress of increased blood pressure, the fact that it contracts more rapidly, sometimes making the valves competent, will lead to a murmur, from the fact that blood is forced through with greater speed. That is one of the theories in the production of accidental murmurs. The wonder frequently is why we do not get a murmur in the cardiac cycle instead of a sound. A heart emptying itself methodically and regularly at every cycle will not produce this murmur.

Dr. Joseph M. Patton:—Illustrative of Dr. Babcock's belief that insurance companies pay little attention to the results of a medical examination, except in a clerical connection, I am reminded of a man whom I examined twenty years ago for insurance, who had a typical, ordinary, well compensated mitral regurgitation. The presence of a murmur was reported, and a statement of all associated conditions made, and the man recommended for insurance. He was promptly turned down. Subsequently another examiner for the same company passed him, and that man had a poor opinion of my ahility as an examiner.

Again, illustrative of Dr. Babeoek's remarks about basing the acceptance of risks more on general principles than on eareful detailed medical examination, I am reminded of a man I had under treatment for chronic myocarditis. He applied for a large amount of insurance. He was an active business man, with large interests. He stated that he was under my treatment, and the company applied to me for information as to what he was being treated for, and what his condition was. I told the company I was not in their employ; neither was I acting as their clerk, and therefore I declined the information. He gave the company permission to get information from me. I asked the company if they were willing to pay my fee. They said they were not, and that I was acting against the best

interests of the patient. I did not give them the information, and the man was rather indifferent to it, apparently; but in less than a week after that they offered to insure him for double the amount of his application, without any further information. So it goes to show that on general principles they would be willing

to accept such an applicant without very much question.

The points brought up by Dr. Babcock in regard to the condition of the heart are all very apropos to the medical examiner's situation. I believe myself that the character of the cardiac sound is one of the greatest importance, and I think the difference in the two sounds at the apex is rather due to a loss of intensity of the first sound, which, with the relative rise in the pitch, makes its relation to the second sound different from the normal. Relatively, it increases the pitch, apparently, of the second sound, and the two sounds are brought nearer together in their general length and character.

In regard to the remarks of Dr. Butler as to the production of murmurs, I believe that Dr. Babcock is absolutely correct in what he said. It is not apparent how a heart, which is working properly, even if it be under increased pressure, with blood which approaches the normal in consistency and general physiological characteristics, can produce a murmur in the chambers of the heart, providing the valves and openings are normal. If one will take a case of chronic myocarditis, which has developed a certain amount of dilatation of the left ventricular cavity, with a relative mitral leak, and put the patient under proper conditions, and under proper treatment to reduce that dilatation, he will observe the disappearance of the murmur as the dilatation subsides, and observe its reappearance under proper conditions of strain afterwards, and he can readily appreciate that this must be so in connection with the murmur which the doctor has described.

Dr. William S. Royce: - I believe the old line insurance companies have a price for insurance based upon the fact that if they can go out and insure all men they could get along and make money without any medical examinations. But we all know that if that examination was dispensed with the insurance companies would not get the average risk, but the sub-standard risks would be the ones to seek insurance, so that, as has been said, the medical examiner is the bulldog on the bank which keeps out the bad risks. In regard to a certain class of risks which Dr. Babcock spoke of, I would like to have his opinion regarding them. spoke of a class of risks, such as office men or board of trade men, who lead strenuous lives, having a heart at 40, 45, or 50 years of age, which is the subject of fatty infiltration and is weak. I would like to ask him if he does not think that nearly all such men in their younger lives were very active; that they were eollege men, men who have made themselves active in athletic work, etc., in their younger days at college, and, in consequence, have developed a certain hypertrophy, the same as a blacksmith does of the biceps, and after a change of life in which they do not use the muscles, the same condition takes place that occurs in the biceps muscle, namely, it becomes flabby. And so the heart may become flabby, fatty or weak. In other words, such a man has developed more heart muscle than he needs to use in later life, and any muscle which is developed and is not used, later becomes flabby. Is not the same true of the heart muscle? We have what is known as intermittent heart upon fatigue, and this intermittence is an indication of a skip in the beat or a rest in the rhythm of the heart, simply arrest due to fatigue. If you ask such a patient to lie down for a few hours the heart will become regular, rested, and normal, as it were, in rhythm.

Dr. Babeock (closing the discussion):—Dr. Butler's remarks with reference to the influence which the corpulent abdomen has upon the area of cardiac dullness are very appropriate. I recognize it constantly in my work. I would like to give the doctor a practical point in this connection. If he will give such a man four onness of the compound infusion of senna and examine him after it has ceased operating, he will find it easier to determine the cardiac outline. That has frequently helped me out. With reference to the fatty overgrowth of which the doctor spoke, if Dr. Butler will recall that I confined my remarks concerning the

area of the eardiac dullness to the left border, because it is the one which it is important for us to determine in most cases. When the area of cardiac dullness cannot be accurately outlined, if you wil note the character, the accentuation, the quality of the aortic second tone, and pulse tension, and you find the aortic second tone, ringing and accentuated, and you find hypertension, you may safely infer that there is cardiac hypertrophy. I believe that will hold water, will it not, Dr. Patton?

Dr. Patton:—I think so.

Dr. Babeock:—And if there is cardiac hypertrophy in a man who is past 40, still more 45 or 50 years of age, without valvular disease, you may be pretty certain that he has chronic myocarditis.

With reference to the murmur of which Dr. Butler spoke in the aortic area, I agree with him that the one indicative of arterioselerosis is a rasping murmur. I did not say anything about the murmurs which ordinarily exist. If the examiner recognizes any aortic systolic murmur and records it, the patient is at once a substandard risk. I am talking about cases that ordinarily pass as first-class risks, but which, in reality, are not first-class risks.

I wish to thank Dr. Patton for his remarks corroborative of what I said, and I was especially pleased to hear what he had to say about the two eases cited by him. I have long maintained that if a man of the experience of Dr. Patton recognizes a case of mitral insufficiency and recommends the applicant for insurance to the insurance company, the company ought to accept him. The very fact that the company does not proves that the examiner is a mere recording clerk. And what the doctor said of their willingness to accept a case of chronic myocarditis is very true, because I know it has been done.

With reference to Dr. Royce's question concerning hypertrophy of the heart in those men who were once athletes in college, I am not willing to accept that as an explanation of the condition of their heart. I believe it is injurious for college men, and especially men of large physique, who have led an active outdoor life, to suddenly subside into a sedentary business life, with very little exercise, not to keep up exercise, particularly a certain amount of it. In these men metabolic changes are active; they are likely to be hearty eaters, and if they do not want injurious results to come about from sedentary occupations, they must keep up a certain amount of exercise. I think the hypertrophy of the heart which we hear about in athletes, although it does exist in some cases, is apt to be exaggerated. It is purely a compensatory hypertrophy in a way, and I do not think that degeneration of the myocardium from disuse, so to speak, is the factor.

Dr. Joseph M. Patton read a paper entitled "Some Features of Chest Examinations of Interest to Life Insurance Eaminers."

SOME FEATURES OF CHEST EXAMINATION OF INTEREST TO LIFE INSURANCE EXAMINERS.

JOSEPH M. PATTON, M.D. CHICAGO.

Considering the nature of the subject assigned me, it is hardly necessary to apologize for the academic character of these remarks, for it is not possible to present a learned discussion of this subject as the relation of the findings of an examination of the ehest to the insurability of an individual is based on the exercise of principles of physical diagnosis, which are academical in their relation to the intimate nature of the processes of disease, which the proper exercise of such principles may or may not discover. It is understood that these remarks are not intended to deal with the relation of sub-standard risks to short term insurance. Therefore, the prognostic features of this latter subject, which postulate a deeper and more comprehensive knowledge of the individual case, will not be considered, and I will confine myself to the points of interest in the ordinary routine examination of the chest. The purpose of this examination is, as far as the insurance department is concerned, the establishment of a condition of health,

which is often more difficult than the diagnosis of diseased conditions. It involves the correct interpretation of the signs of incipient disease, and correct judgment as to the importance of slight deviations from classically normal conditions. Failure in either of these faculties may precipitate upon the examiner the judgment of a superior, whose post hoc knowledge is literally figurative and correspondingly adaptable to any demands the situation may give rise to.

INSPECTION OF THE CHEST.

Inspection of the completely bare chest is of great value for our special purpose. Both direct and oblique light should be employed, as the latter is of special value in detecting local variations in the movement of the chest walls such as may result from pulsations and retractions. Special attention should be given to the size of the chest. Great variations occur within the limits of health, in respect to the size of the chest in relation to general physique and weight. Unusually small chests are likely to be associated with a history of rickets or with obstructive conditions of the upper respiratory tract, while large chests suggest the possibility of emphysematous conditions.

The Shape of the Chest.—Leaving aside the many variations of childhood, we find two types of interest, the paralytic thorax and the barrel-shaped chest. The former, with its minor degrees of flat chest, is generally but erroneously regarded as characteristic of phthisis. The stooping shoulders, angular scapulæ, prominent clavicles, sharp costal angles, while indicative of deficient lung capacity, are often present with positively healthy lungs. The barrel-shaped chest, which does not at all resemble a barrel, is infantile in conformation. The obtuse costal angles, high shoulders, short neck and increased antero-posterior diameter is characteristic of increased capacity of lung cells, but not of functional ability. The nutrition of the chest walls is readily determined by inspection through the prominence of the bony structures, independently of the paralytic type of chest. Supra or infra clavicular depression, aside from other changes in the chest walls, suggests

Deformities of the Chest.—Aside from the symmetrical variations just considered, and also those deformities produced by rachitis or spinal curvatures, we have local deformities which result from pleurisy, general or local, lung cirrhosis, chronic pneumonia, chronic phthisis, localized chronic bronchitis, tumors, or malignant disease. These cause flattening of a portion of one side of the chest walls, sub-clavicular, axillary, infra-axillary, infra-mammary or sub-scapular, as the case may be. Compensatory action of the uninvolved portion of the lung, or of the opposite lung, emphasizes these local changes. Inspiratory intercostal depression is usually more or less marked over portions of these areas, but is not always proof of pleural adhesions. Inspiratory depression in the axillary

region is seen with healthy lungs.

apical tissue changes of some sort.

Prominence of a portion or the whole of one side of the chest is seen in pneumothorax, pleural effusion, malignant disease, and sometimes from emphysema. In the two former the intercostal depressions may be effaced, but rarely if ever bulge. In the latter, local inspiratory depression may be observed. The distinctly local prominences are likely to be due to aneurism, tumor of the chest walls, lungs, mediastinum, or thoracic glands, tubercular abscess of the ribs or sternum, or to empyema necessitatis. Prominence of the precordial region is very common in moderate degree with healthy chests. It is not important unless associated with signs of cardiac disease. Absence of apex beat may indicate emphysema; forcible apex beat may mean contraction of pleura or lung, while displacement of apex beat is a most valuable sign of pleural effusion.

Respiratory Movements.—The normal type of breathing may be exaggerated by disease, such as the diaphragmatic type by bronchial asthma or emphysema, while the costal type is increased by interference with the action of the diaphragm by abdominal fluid, tumor, cirrhosed liver, leukemic spleen, and in some cases of spasmodic asthma. Diminished expansion of one side, if associated with distention of that side, is indicative of pleuritic effusion, pneumothorax, or tumor of lung or pleura. If loss of motion is associated with retraction, it is indicative

of chronic pleurisy, cirrhosed lung, chronic phthisis, or occluded bronchus. Loss of expansion of one apex is a classical sign of tuberculosis of that part. It is often appreciated best by standing behind the subject and looking down over the clavicles with the subject's head inclined forward. Loss of motion of one side may be due to pressure or inflammatory conditions below the diaphragm, as in disease of the liver, spleen, sub-diaphragmatic abscess, chronic cholclithiasis, peritoneal tuberculosis, etc. Unilateral paralysis of the diaphragm is also a cause.

Increased expansion of one side of the chest is compensatory to loss of function in the other side from very many causes. The presence of intrathoracic conditions affecting the functional integrity of the lungs and interfering with the action of the diaphragm may be suspected by careful observation of the Litten phenomenon, which is always present in people who can breathe deeply, except in the obese. It is modified or absent with intrathoracic disease, and is not affected by fluid or solid tumors below the diaphragm.

Dyspnæa occurring with slight exertion is suggestive of either heart or lung disease. Inspiratory dyspnæa may mean obstruction of the upper air tract or may occur with myocardial degeneration. Expiratory dyspnæa is indicative of asthma, emphysema, or chronic bronchitis. Inspiratory depression of the axillary or sub-clavicular interspaces may accompany dyspnæa if the lungs do not expand readily. Rhythmical disturbances of breathing are not of special interest in this connection.

Pulsating areas about the chest may be from the heart, pulsating empyema, aneurisms, or venous pulsations. In the neck, a presystolic pulsation in the external jugular, or in the bulb between the sternomastoid attachments is often seen in health. Systolic pulsation may mean tricuspid regurgitation, provided the vein fills at once from below, when emptied by stroking upward. Transmitted impulse from the carotid, like other causes of venus pulsation, will not show if the vein is emptied upward.

Palpation of the Chest.—Bearing in mind that tactile fremitus varies much within the bounds of health, that it is greater in men than in women, in adults than in children, with low than with high pitched voices, that it is more marked in the upper than in the lower portion of the chest, greatest over the right apex, and somewhat more marked all over the right than the left chest; that in women, children, and fat people fremitus is often not to be felt, we may obtain valuable information from increased, diminished, or absent fremitus. While the classical distinction of our text-books that increased fremitus depends upon increased density of tissue may be regarded as abstractly true, we will often find the fremitus most marked over the healthy side, when it is compensating for a marked interference with the entrace of air to the opposite side. This is apparent in persons with thin chest walls where the greater tension of the residual air in the compensating portion results in vibration being conducted to the chest walls with greater facility. Therefore, we should guard against taking it for granted that increased fremitus over a portion of the lung necessarily means partial consolidation. When pleural friction is dry and grating it may be palpated in the axillary regions. Likewise pericardial friction may be felt about the third or fourth interspaces to the left of the sternum. When distinct, these signs are valuable, because they are simulated by no others except râles which are large enough to be palpated, and these are very rare and of a different feel.

Tenderness may be present over any portion of the chest in neurotic individuals, but it is superficial and not deep. Phthisis causes tenderness over the upper and anterior portion most frequently, while in intercostal neuralgia the tender points are limited to the exit of the nerves involved. Tenderness may be present over the precordial region, and in the subscapular region in cases of fermentative dyspensia.

The palpatory signs of heart and arterial diseases are very important, but will not be considered here.

PERCUSSION OF THE CHEST.

This is one of our most valuable and the most abused methods of examination. It has been claimed that the difficulty with many examiners was their inability to be at once the active and passive agent, and that discrimination of pitch of sound is unnecessary as judgment of intensity and resistance of tissue will suffice. It is not apparent how one's judgment of intensity can be accurate without some knowledge of pitch. A musical ear is certainly an advantage. Bearing in mind the normal dull areas of the heart, superficial and deep, of the spleen, liver, and the modified normal dullness of the right apex, we may study the character of the percussion note in the rest of the lungs. The determination of the mobility of the borders of the lungs by outlining the excursion of the borders between expiration and deep inspiration is important in detecting pleural adhesions. Complete absence of mobility is pathological. Continued percussion over one portion of the chest, especially if it is approximately sound, will increase the intensity of the note and lessen the pitch. This has been described as due to the "lung reflex," or the faculty of the lung for developing a local state of emphysema oncontinued initiation of the surface of the chest.

The increased excursion of the borders of the lungs is important in large lunged emphysema when the tissues of the chest wall are too thick to allow of discrimination as to the intensity of the note. In the senile type of emphysema the hyperresonant quality of the note itself is of most importance.

AUSCULTATION OF THE CHEST,

There are two difficulties that frequently appear in auscultating a chest. They are mainly due to desire on the part of the subject to present the best condition possible. These are the occurrence of muscle sounds, and an unnatural, inefficient type of breathing. If the subject holds himself very erect and pouches his cliest like a pigeon, there will often be heard peculiar sounds caused by museular contraction, and these may be mistaken for intrathoracic adventitious sounds. They are most often heard over the pectoral or the trapezius museles. I have known an applicant to be rejected because of the occurrence of these sounds. It is very difficult to get some persons to breathe deeply and naturally. We can overcome this difficulty by making the subject count as long as possible on a single. breath. The inspiration following is usually satisfactory. Coughing is another way to produce a deep inspiration, and is especially useful when we wish to. bring out deep-seated, indistinct râles, as in incipient apieal tuberculosis. It must not be forgotten that the normal breath sounds above the right elaviele, the spine of the right scapula, and in most instances just below the right clavicle are slightly broncho-vesicular in type, sufficiently so to be indicative of disease if heard elsewhere. The breathing at the base of the right lung posteriorly is often more feeble than in the same region of the opposite side in healthy chests. At times the whole right side will show more feeble respiration. Interrupted or cogwheel breathing, when heard all over the chest, may be due to nervousness, cold, or fatigue, and will disappear if such eauses are removed. When it is localized in the lower portions of the chest it may be due to local bronchitis, peribronehitis, or to habitual faulty type of respiration. In the upper portion of the lungs it may indicate tubercular processes.

Exaggerated vesicular breathing is found in children and in adults with flexible chest walls, and the compensatory form in any case where one portion of lung is doing extra work vicariously. Diminished vesicular breathing occurs from fluid or air in the pleural eavity, emphysema, bronchitis, thoracic pain, obstruction of the upper respiratory tract, paralysis of muscles of respiration, and from interference with the action of the diaphragm. The causes of broncho-vesicular and

bronehial breathing need not be considered here.

Râles are more easily recognized than slight changes in the respiratory murmur. They are not, however, always to be regarded as evidence of disease. In persons not in vigorous health who breathe imperfectly, in many healthy persons from 25 to 40 years of age, and in the majority of persons after middle life, fine suberep-

itant râles may be heard at times along the margins of the lungs at the base of the axillæ or behind. They are heard with the first two or three deep inspirations, are usually transitory, but may be persistent. According to Cabot the presence of these râles in persons over 40 years old is quite physiological. Localized collections of râles in the lower portions of the lungs, laterally or posteriorly, are often due to bronchitis, which may be of streptococcus or staphylococcus origin. These may simulate incipient or acute tuberculosis, but in this situation are not to be regarded as indicative of tuberculosis until proven to be so. Apical râles, especially when localized, are to be regarded with suspicion until proved not to be of tubercular origin.

Pleural friction sounds are usually heard from the fifth to the seventh interspaces about the anterior or midaxillary lines, where the lung makes its greatest excursion. They may be heard all over the chest. When they simulate bronchial râles in character, we may distinguish by their size as compared with the time of their recurrence, moist pleural friction occurring later in the inspiratory act than a bronchial râle of the same size. A dry pleural rub may, at times, be heard on both sides of the chest, inferiorly, in persons in good health. When a friction sound disappears or is heard with difficulty it may be brought out by directing the subject to hold his breath and raise his forearm over his head. During this movement the friction may be heard, care being taken to exclude muscular or skin sounds. Again the subject may be placed on the affected side for a couple of minutes, raised quickly while holding his breath, and while the examiner listens takes a deep breath.

The characteristics of the spoken voice are chiefly of interest in connection with pleural effusions and consolidated lung tissue. The whispered voice is of special value in detecting small areas of consolidation or the boundaries of large areas. Local consolidation may be better appreciated in this way than by the change in the respiratory murmur.

These are some of the features of an examination of the chest which are of interest to the examiner of life insurance applicants.

DISCUSSION.

Dr. Robert H. Babcock:—It is a great pity to have this excellent paper go by without some remarks. Although I can not add anything of interest to the subject, yet I would like to dwell for a moment on spinal deviations as affecting the percussion note. Not infrequently, an individual comes before a physician or medical examiner for an examination of the chest, and the physician detects some difference in the intensity of resonance on the two sides, which may be in front or behind. He is at a loss to determine whether that actually means disease or not. In all such cases I would advise a careful study of the conformation of the chest to determine whether there is scoliosis, for if there is spinal deformity, with some diminution in the diameters of the sides, the percussion note is very apt to be raised, and the breath sounds may be changed somewhat in quality, perhaps a little diminished or in some instances harsh. Before the physician decides that it is due to tuberculosis, if there is slight impairment in the upper portion of the interscapular region of one side, he should carefully weigh the possihility of its being due to deformity. Another thing which has seemed to me of value is this: I have sometimes found the apices, in an individual whose breathing was superficial, to be somewhat deficient in resonance, but after he has taken a number of deep inspirations the percussion note over the upper portion of the chest comes out more clearly as regards its intensity. I think that it is a valnable point ..

Dr. James Harvey Lyon: Permit me to suggest that the majority of applicants for life insurance present at first examination conditions which apparently deviate from the normal. This is common observation, and unless we do as Dr. Babcock has just suggested, instruct the patient to breathe for a few moments properly, as we term it, or change his position, we do not get at the condition that really exists.

The author of the able paper to which we have listened says that this condition or that condition "may" be due to a certain cause. The fact resolves itself, therefore, into this as a deduction from the paper, namely, we are looking for an absolutely normal, ideal individual, whom we can recommend as worthy of life insurance. So far as they deviate from the may-be's or may-not-be's, we will register them as normal risks and necessarily so decide, a condition of no certitude. I would emphasize the first remark I made, that the majority of cases which we examine for life insurance present something which apparently deviates from ideal normality, but that with a little instruction to the applicant in the matter of breathing, position, etc., the apparent abnormality will disappear or explain itself, and we obtain upon physical examination that which we readily recognize as indicative of normal conditions, and, therefore, look with judgment and a better hope upon the applicant.

Dr. Patton (closing the discussion): - Dr. Babcock's remarks with reference to scoliosis were very pertinent. It is not even necessary to have a deformity of the spine, for we know that the habitual position people get into will cause a sufficient deviation of the spine to modify the breathing on one side of the chest without there being absolute pathologic changes in the spine. Take patients as they run and outline the vertebral processes, and then ask them to stand perfectly erect and you will be surprised how many people who would scoff at the idea that there is anything the matter with their backs, will show deviations of the spine sufficiently marked to modify the action of the two sides of the chest. We are entirely too much in the habit of ascribing slight deviations in the functional capacity of one lung to something inherently wrong in that lung. We are not sufficiently in the habit of going outside the lung tissue itself to look for such causes in the muscles and bones of the chest, in obstruction in the upper respiratory passage, in conditions below the diaphragm which interfere with the proper action of that muscle and of the lung. All these things influence the type of respiration, together with the various habits of breathing which the average person gets into, and, if we would look further than the mere tissue of the lung, we will find often causes which may be removed and so dispose of signs in the lung itself, which appear to be pathologic, but which are not.

In regard to the remarks of Dr. Lyon, I am perfectly free to admit the ifs and ands. I want the ifs and ands of the situation; but it very largely depends on a man's experience as to the relation which a certain sound bears to certain intrathoracic states. You can not tell absolutely that certain features of a given sound always mean exactly the same thing. Sounds that are heard by one physician may be interpreted by him to indicate the existence of a certain pathologic condition. The same sounds may be interpreted differently by another physician who listens to them. What I tried to bring out in my paper was this, that some of the sounds as heard that are regarded as pathologic represent nothing so far as

the patient's insurability is concerned.

Dr. T. B. Wiggin read a paper on "Neurasthenia: Its Prognosis and its Relation to Medical Selection."

DISCUSSION.

Dr. Sidney Kuh:—There are a few points in which I differ from the views expressed by the essayist, and these differences are largely due to the fact that our definition of what constitutes neurasthenia is not the same. Dr. Wiggin's view of the subject, I think, is broader than mine, in that he includes a number of symptoms which to me would indicate some other disease than neurasthenia. He spoke of disturbances in the sexual apparatus as a frequent cause of neurasthenia. I believe that these disturbances are commonly over-estimated as causative factors in the disease. I do not mean to say that they are of no importance, but rather that we are inclined to attribute to them greater importance than they deserve. This is especially true of masturbation. I have serious doubts whether masturbation ever produces neurasthenic symptoms, and I believe that in all cases of excessive masturbation, we have to deal not with cause and effect, but rather with two effects of the same underlying cause. I do not believe that exces-

sive masturbation ever occurs, excepting in an individual who has a vicious nervous heredity, who has a nervous system which is predisposed to disease, and that causes both excessive masturbation and neurasthenic symptoms. Of course, excessive masturbation in turn will increase the degree of neurasthenia existing in that individual. I disagree with Dr. Wiggin when he states that neurasthenia necessarily decreases the capacity for brain work. The severe stages of neurasthenia undoubtedly have that effect, but the majority, perhaps all, of those who do great brain work in these days, and who have done great brain work, have been more or less neurasthenic. Another point in which we differ is as to the effect of neurasthenia on sexual power. There, too, I believe it is only the severer degree of the disease which produces a diminution in this function. In the milder forms of neurasthenia, we frequently meet rather the opposite condition, excessive sexual appetite, which again reacts upon the nervous condition of the patient in a disastrous way.

One other point I want to mention is this: In speaking of the various diseases which it is necessary to differentiate from neurasthenia, Dr. Wiggin spoke of hypochondriasis. I do not believe that there is much difference of opinion amongst neurologists to-day as to the importance of the group of symptoms which are known as hypochondriasis. They are not considered by the majority of neurologists as a clinical entity. They are not considered as a disease, but rather as a group of symptoms which are especially common in neurasthenic individuals.

As to the prognosis, that seems the point that interests us most. I do not believe that neurasthenia in itself shortens life. In fact, the neurasthenic individual, as a rule, is rather a "wiry" individual, though he is inclined to make a good deal of to-do about slight disabilities. He is, so far as my experience goes, rather healthier, if we consider only the graver ailments, than the average person, and I believe that if we could gather statistics as to the duration of life in those who are neurasthenic, and in those who are not, we would find that the duration of life in neurasthenics would prove to be as long as it is in the average of the population. This appears to be true in spite of the fact that there are certain features about neurasthenia which one might believe would have a tendency to shorten life. Most neurasthenics suffer more or less from gastrointestinal disturbances and anemia, and one would imagine that these diseased states would have a tendency to decrease their resistance; still, I think the resistance of the neurasthenic to infectious diseases is doubtless as great as that of the average individual. One of the ways in which neurasthenia may have a tendency to shorten life indirectly is by causing a craving for stimulants, a fact to which Dr. Wiggin has already called our attention. It is the neurasthenic individual who is liable to abuse alcohol, tobacco, and other stimulants, and one can readily see how in that way he may injure his heart and kidneys, and so shorten his life.

Again, the neurasthenic is more liable to suffer from diabetes than the nonneurasthenic individual. This may be partly due to the fact that excitement has a tendency to produce diabetes, and that the neurasthenic is an individual who is in a state of chronic excitement, who is easily disturbed by slight influences which would hardly disturb a healthy individual. It does not seem at all improbable that if, for any reason, should be develop Bright's disease, he would be more likely to have uremic conditions than the non-neurasthenic, since it is a well-known fact that violent excitement in nephritics is very liable to produce symptoms of uremia. It is often stated that neurasthenia may "develop into" dementia paralytica. That statement I believe to be absolutely incorrect. A neuropathic disposition has some influence in the causation of dementia paralytica. A person who has a bad nervous heredity, who has early in life acquired syphilis, would probably be more liable to develop paresis later in life than the person who has no vicious nervous heredity. But I do not believe that neurasthenia ever constitutes the first stage of paresis, as some seem to think. I do not believe that neurasthenia is an important causative factor in what we ordinarily term the insanities. Of course,

the same underlying cause that leads to neurasthenia, that is, a neuropathic dispo-

sition, may, under favorable conditions, be the cause of insanity.

In speaking of the prognosis of neurasthenia, I believe it is necessary to draw a sharp line between the neurasthenia which is due to other etiological factors and some forms of traumatic neurasthenia. It has been demonstrated that cases of traumatic origin, especially those that are due to injury to the head, in which the early symptoms are those of a neurasthenia, with nothing beyond that and absolutely no indication of organic disease for months, sometimes develop, later on, signs of graver brain trouble. We now have the records of a number of postmortems, with careful examinations of the brain, showing changes which, in all probability, must be attributed to the injury. I would say, then, that the ordinary form of neurasthenia, in my opinion, has not a distinct tendency to shorten the life of the sufferer; but that in cases of injury to the head which produce neurasthenia, the prognosis as to life, would be considerably less favorable.

Dr. Julius Grinker:—I regret very much that Dr. Wiggin has attempted to discuss hypochondriasis, hysteria, and neurasthenia under one heading: and yet he mentioned toward the end of his paper that these conditions are to be differentiated from each other. If I dissent from any one point in the paper, it will be with reference to his conception of neurasthenia. His idea of neurasthenia is an antiquated one that has been given up long ago. Neurologists of to-day maintain that there is a condition of neurasthenia different from that mentioned by the essayist, to which the previous speaker has already called attention. But while discussing the subject and taking issue with the essayist regarding certain points, he still left us in doubt as to what he meant by neurasthenia. I will state what I

mean by neurasthenia, and then speak of its prognosis.

I would exclude the conditions Dr. Wiggin mentioned, which begin in early life and in which psychic degeneracy is a marked feature; conditions which show the so-called stigmata of degeneracy or an insane heredity, and also the eases mauifesting hypochondriaeal symptoms. Neurasthenics usually have no neuropathie heredity; they are most commonly the offspring of tuberculous, gouty, or arthritic parents. The neurasthenie was probably delicate in childhood and has probably passed through a number of infectious diseases, which caused a weakening of the nervous system. The patient who has psychic degeneracy or insanity in his ancestry is not very apt to become a neurasthenic, but will most likely develop either hysteria or become the subject of some form of psychosis or hypochondriasis, or he may even develop the dementia of youth, the so-called dementia precox. In true neurasthenia, the symptoms of nervous exhaustion usually develop in adult life. It is true, as Dr. Wiggin has stated, that we all begin life with a certain limited amount of nerve capital, and it is possible that a man may escape neurasthenia if he does not dissipate his nerve capital and lives with reason, even if he has a tendency to nerve-exhaustion. He may be able to go through life unscathed. Those become neurasthenic who overestimate their abilities for hard work and do not know when they are beaten. In many instances it is overwork combined with worry, and in many others infectious diseases so weaken the organism as to produce nervous exhaustion. True neurasthenia means a condition of nervous fatigue, which is chronic in duration. Imagine the ordinary tired feeling experienced after some exertion, physical or mental, becoming a permanent condition and you have a fair idea of the neurasthenic state. The nervous and physical fatigue hinder the patient from meeting the ordinary obligatious of life as he was accustomed to meet them. He can not work hard physically, nor can be work mentally as he wishes to do, and everything be undertakes bears on him heavily, because he is suffering from nervous exhaustion.

I want to say a word or two with reference to the prognosis of neurasthenia. So-ealled congenital neurasthenia does not exist, in my opinion. It is a neurasthenial state, that is, like it, but not neurasthenia. Neurasthenia, as understood to-day, is a fatigue neurosis and can be recovered from. It is coming to be regarded as a self-limited disease, which may last from several months to two or

three years, and patients get entirely well. When an applicant for life insurance who is suffering from neurasthenia presents himself to the medical examiner he will rarely inform him that he is nervous, but the examiner should have some clue as to the existence of the disease. The candidate usually flushes; he perspires; his pulse becomes accelerated; he pants for breath; is very anxious about the findings and a common question is: "Doctor, do you find my heart and lungs all right?" He has a great many more questions to ask you, if you will permit him. There is something suggestive about the appearance of a nervous individual which is difficult to describe. Supposing we have discovered that an applicant for life insurance is a neurasthenie; what shall we do? Accept him, of course. The average neurasthenic is apt to be a long-lived individual. He is going to take eare of himself because he has received timely warning in the shape of symptoms of fatigue. He knows that he is nervous and he is going to be eareful about his mode of life. When he does this, he is apt to live a long time.

Some textbooks state that a patient who is the subject of neurasthenia, ultimately will develop arterioselerosis. It appears to me that in cases in which this has been observed there were already eardiovascular changes before the neurasthenic symptoms had developed. Neurasthenia may appear as a complication in many cases of organic disease. A man with diabetes may be a neurasthenic. Neurasthenia and diabetes are often found in the same individual, but patients do not develop diabetes simply because they are neurasthenics. General paresis in its early stages presents symptoms which so closely simulate those of neurasthenia that often a patient passes for a neurasthenic a long time before some one discovers that he is really paretic. Whenever we notice a decided irregularity or inequality of the pupil in a supposed case of neurasthenia we become suspicious of our diagnosis. Speaking of neurasthenia in the limited sense of the term, I would say that its subjects are good risks for life insurance, although they occasionally impress the examiner as being very sick.

TUBERCULOSIS IN OUR DISTRICT.

Dr. John A. Robison, chicago,

When your committee on program did me the honor to ask me to participate in the program to-night I chose the subject "Tuberculosis in Our District" for two reasons: first, to secure the co-operation of the members of our district in carrying on certain work the Chicago Institute of Tuberculosis is about to inaugurate; and, second, to display before you as graphically as possible the prevalence of tuberculosis in our midst and arouse a discussion as to the best means of combating it.

First, it might be wise to give a brief history of the origin and aims of the Chicago Institute of Tuberculosis. As you probably know, the Visiting Nurses' Association has done a great deal of good during the past few years by nursing and educating tubercular patients how to prevent and alleviate consumption. For two or three years past there has been a committee on tuberculosis, composed principally of physicians and philanthropic laymen, who have co-operated with the Visiting Nurses' Association, and have maintained an office in the Visiting Nurses' Association rooms, and have done a great deal of work among the tubercular in our city, the city being districted and cach district having a visiting physician, who visits such eases as have been reported to the Visiting Nurses' Association as probably having consumption. After the ease has been examined by the physician a nurse is detailed, who visits the patient, instructs the family what preeautions to take, and from time to time the patient is visited and progress recorded. The nurse in her report to the office details such facts concerning the home, its sanitary or insanitary condition, whether other members of the family present suspicious evidence of being consumptive, etc. The pin-map which I ex-

^{*} Read before the West Side Branch, March 15, 1906.

hibit tonight is the result of much of the statistical work in connection with data obtained through the health office which has been done by the association. The amount of work which has devolved on the Visiting Nurses' Association has become too voluminous for the association to undertake, and therefore there has been organized the Chicago Tuberculosis Institute for the purpose of carrying on the fight against tuberculosis. The objects of this organization, as stated in its constitution, are: 1. The collection and dissemination of exact knowledge in regard to the causes, prevention and cure of the disease. 2. The promotion of legislative and other measures for the improvement of living conditions. 3. The treatment of the consumptive poor in one or more dispensaries or in such other institutions as may be established for that express purpose, or by such other means as may be considered feasible and desirable. The attainment of its concrete objects is assigned to the following departments:

Department of Education.—To continue in general the work carried on by the committee: administration, investigation, lectures, printed matter, bibliography, correspondence.

Department of Dispensaries.—This department is to establish at once and manage a central dispensary, which is to provide medical treatment for ambulant cases (all forms of tuberculosis), exert beneficial activity in the families of consumptives, and by all possible means work for the improvement of sanitary conditions in the home.

Department of Sanatoria, Camps and Hospitals.—This department will endeavor to provide institutional care for poor consumptives.

Department of Immunity Research.—Will conduct experiments, seeking to make possible the artificial immunization of man, on similar lines to the successful methods now employed in cattle.

While I do not belong to the department of education, I thought this would be a good opportunity to interest you in the special department to which I have been assigned, viz., Sanatoria, Camps and Hospitals, but I wish to casually glance at the objects of the other departments before dealing directly with my own department. And as to the department of education, it is fully equipped with literature, and under the administration of the chairman, Dr. Klebs, is ready to enter on an active campaign. Any physician interested in this work is asked to co-operate and spread the information among his clientele and assist in the work of educating the public.

The department of dispensaries is under the chairmanship of Dr. E. A. Gray, and this department has its plans well matured for establishing a dispensary soon. I understand the vicinity of the County Hospital is thought to be the most appropriate place. This society should take an active concern in the dispensary if it is established. The dispensary is intended only for the poor and will not interfere with the private patients of physicians; in fact, it will be a safeguard against unduly pauperizing the public. It is hoped that all physicians who come in contact with tubercular patients will inform the Tuberculosis Institute of such cases, for statistical purposes, if the patients are well to do, and for treatment, if the patients are poor and the physician does not feel that he can spare the time to care for them.

As to the department of Sanatoria, Camps and Hospitals, I show you to-night the distribution of tuberculosis in some of the wards, and wish to emphasize the necessity of establishing such institutions.

The statistics were collected by the Visiting Nurses' Association during 1904 and 1905, and kindly collated by Mr. Davis, Clerk of the Tuberculosis Institute.

TUBERCULOSIS ON THE WEST SIDE.

Cases reported to tuberculosis committee during two years, from Wards Nine to Twenty inclusive, embracing the thickly populated district of the West Side:

		Rate per		
		10,000		
Ward.	No. 1904.	living, 1904.	No. 1905	
9	109	19.73	100	
0	118	20.65	112	
1	112	18.51	123	
2	104	14.95	120	
3	73	14.35	81	
4	124	22.19	123	
5	80	14.25	88	
6	90	13.66	134	
7	168	24.48	171	
3	198	58.99	175	
0	164	30.65	160	
0	103	18.44	90	
Totals	1,443		1,477	

The rate per 10,000 living of cases reported in 1904, for the entire city, was about 20.04. Seven of these wards are below that rate, and five above it. The high rate in Ward 18 is caused largely by the lodging houses in the neighborhood of West Madison street. There are seventy-one lodging houses in that ward, and the class of people who patronize them, together with the condition of the houses themselves, makes tuberculosis extremely prevalent in them.

The ghetto is on the West Side, in the Nineteenth ward; the largest Bohemian settlement in America is in the district from Halsted to Ashland avenue, and from Sixteenth to Twentieth. There is also a large Italian colony, and many other foreign colonies in the Hull House district in Ward 19.

In the central part of the West Side there are more very old, wooden houses—many of them moved to the rear of lots—than in almost any other part of town. This part of town has not been renewed since the great fire to the extent that other parts have. Probably a full investigation would show a greater extent of bad housing in the district under consideration than anywhere else in the city, at least in residence districts.

ELECTROTHERAPEUTICS.*

Dr. Gordon G. Burdick. CHICAGO.

This name has almost become obsolete, and has been replaced by physiological therapy, which involves the use not only of the different forms of electric modalities, but the use of vibrations, massage, hydrotherapy, and a refined system of calisthenics. The question of electrotherapy is constantly bobbing up in some form or another, just at the time when the "conservative element" in the profession had thought they had it decently interred where it would no longer trouble or disturb their thoughts. From the earlier inception of this line of treatment, warfare has been on between its devotees and others, who for some reason have failed to attain much success with it in the treatment of disease. The conservative men of the profession have always succeeded in putting the electrotherapeutists on the defensive, and a "parrot and monkey time" has always ensued when the matter has been brought up for discussion, with the inevitable result that the truth has rarely appeared in print.

The work of physiological therapy has undergone a radical change in the last ten years. About 60 per cent. of our work has been surgical disasters, or the wrecks that are turned out of our operating rooms, broken in spirit, body and purse. The demand for some relief for this numerous class of sufferers has enlarged the field of endeavor until, at the present time, it embraces every known form of modifying physiological processes. That we are wonderfully successful can be judged by the enormous number of physicians who are entering this field.

^{*} Read before the Stock Yards Branch of the Chicago Medical Society, March, 8, 1906.

As soon as a physician sees one of his so-ealled ineurable nervous wreeks restored to health he immediately becomes a convert and purchases several hundred dollars worth of machinery and starts in this special line,, and seems to think that, in some way, the machinery has special medicinal value. He does not realize, until he has spent his money, that to be successful requires harder study and more special knowledge than he ever dreamed of in medicine; in fact, he discovers that the machinery is of small consequence if he does not recognize the condition presenting itself to him for treatment, and selects the suitable form of energy for the case in hand.

A physician to be successful in physiological therapy must be a first-class diagnostician, and must cultivate an inward contempt for any other man's idea until he has verified it by his own labors. The necessity for this has been proven to me, over and over again, in the last few years, where I have had tuberculosis sent to me that turned out to be tertiary syphilis, as well as other cases with a diagnosis of syphilis that proved to be tuberculosis. Many times these cases will present themselves with both diagnoses having been made, and, frequently, with a tubercular infection grafted upon a syphilitie sore. As a general rule, very little is accomplished in these cases by the use of drugs, as nearly all of them have undergone the drug treatment until their stomachs rebel at the very thought of medicine. Their usual appearance is a general lack of nervous tone, with considerable physical disability, and a very much enfectled stomach.

The keynote of success in physiological therapeutics is, first, to attend to the digestive organs, to be sure that the food taken into the stomach is suitable, sufficient, and well digested. Invariably, these patients present themselves with more or less ptosis of the abdominal organs, a dilated stomach, and a flabby abdominal wall. To most physicians it would seem an absurd procedure to treat a local tubercular ulcer, located upon the extremities, by a sinusoidal massage of the muscles of the abdomen, and upper extremities, one electrode placed at the nape of the neck and another moved about the abdomen. As the different groups of museles respond we eause every one to move at least twenty-five times during the course of the treatment. This treatment is repeated daily with gradually inereasing vigor of museular movement, until the patient can be taught to control the muscles of the abdomen as well as other parts of the body. A weight is placed upon the abdomen and the patient is compelled to move it from place to place by the action of the muscles alone. When we have arrived at this stage we find that the patient has excellent control of himself. Next, a rubber ball is placed upon the abdomen, and he is taught to play with it, throwing it up and catching it; some become so expert that they will support themselves upon their head and heels, and throw and catch the ball for five minutes without exhaustion. After they have reached this stage they are taught to grasp their stomach between the diaphragm and abdominal muscles, and after drinking a pint of water to shake the contents as well as they could with their hands, and eventually squeeze the contents of the stomach into the duodenum. By this time, if the proper ealisthenics have been given to the remainder of the muscular system, our patient can sleep and eat, and begins to take an active interest in his surroundings. The improvement being so great in his general health, distinct signs of improvement have taken place in the ulcer, which we are now ready to treat. If it has been proven a true tubercular infection, the x-ray alone is used, if mixed with the streptoeoeei, liberal doses of streptolytic serum is injected twice a week. If external ulcerations are present they are given local feeding to hurry up the process as much as possible, some of the various beef extracts, rendered antiseptie, being used. If we have eonsiderable tissue that we wish to get rid of we use a zine electrode amalgamated with mercury, connected to the positive pole of a galvanic battery, and drive the chlorid of zine and mercury into the tissue; this is followed by an external slough, its size depending upon the time and the amount of current used. The slough will separate in about ten days, leaving beautiful granulations behind it, with a zone that has been rendered sterile, extending for

one inch around the field of operation. Granulations will fill in the place in a few weeks, leaving a fine flexible cicatrix.

There are several fundamental principles that all physiological therapeutists must learn. They are broad and easily understood: First, a positive current is a scdative; second, a negative current is a stimulant; third, a current always disintegrates a fluid conductor through which it passes, and in an exact ratio to its ampere value; fourth, motion takes place in both directions within a conductor; fifth, hydrogen is liberated and gathers at the negative pole; sixth, oxygen gathers at the positive pole; seventh, a broken circuit or a change in potential will produce muscular contraction; eighth, that all metallic elements are disintegrated, their ions driven from the positive pole to the negative; ninth, the human body may become a condenser, and can be charged and discharged at will.

If we conceive of electricity as a motion we can get a better mental grasp of our subject. Let us adopt the theory that a positive flow of current means a right-handed revolution of the corpuscles within the atom, while a negative manifestation means a left-handed rotation of the same. This will enable us to understand further the difference between currents and volts, or electro-motive force. The number of turns made by the corpuscles in a second's time is the electromotive force, while the number of corpuscles that turn in a second's time is the ampere flow. We can increase our voltage by increasing the speed of our corpuscles, or increase our amperes by moving a greater number of them. All the different modalities are of the same origin, and are merely a different adaptation of Ohm's law. The medicinal effect of the different kinds of current, depends upon the mechanical, chemical and physiological effect upon the body cells. With the lower potential currents, the chemical effects are noted, while with the high potential currents the mechanical effect predominates. With the condenser, or oscillatory discharge, including the high frequency currents, the effect is physiological. By carefully keeping this in mind the indications in treatment are easy. Suppose, for instance, that we desire to treat a woman with an old chronic pyosalpinx, adhesions and exudations giving the impression of a solid pelvic floor. We would use the galvanic current with a large, well protected, copper electrode, connected to the positive pole, and a large clay negative electrode under the back or over the abdomen. We would use about 100 m. a. of current three times a week, driving the copper ions into and through the dense mass within the pelvis. This is done in order to get the local and antiseptic effect of the colloidal copper within the tissues. Next, we would use a vaginal negative electrode, in order to make the tissues throughout the mass strongly alkaline owing to the decomposition of the fluids liberating hydrogen. We know that all exudates are much more soluble in an alkaline medium, in either an acid or a neutral form. After a few of these treatments we will find that the uterus is quite movable and painless upon manipulation, and the time has arrived when we desire to get mechanical and physiological effects from our treatment; so we connect the vaginal electrode with one pole of the condenser, and, after carefully insulating the patient, the condensers are allowed to discharge slowly through a spark gap of about one inch. Each time a spark passes, the patient receives a discharge, and a vigorous muscular contraction takes place all over the body, and particularly in the muscles surrounding the electrode. This treatment is given ten minutes daily, and in a few weeks all indurations and adhesions will have disappeared, and the uterns will be as movable as in one who has not had this trouble. When a patient becomes one side of a condenser, we must understand that every cell in the body is under a torsion strain, and when this strain is suddenly relieved a series of oscillations are set up, while the cells endeavor to attain an electrical equilibrium, while the repeated charging and discharging gives us an atomic massage reaching nearly every cell in the body.

It can be seen from the foregoing that the subject of electrotherapeutics has branched out, until to-day there exists no text-book that even scratches the surface of the subject, and for that reason the beginner has a hard row to hoe. "Does the work pay?" is a question I am asked many times a week by some physicians who are thinking seriously of devoting their time to this specialty.

This is a hard question to answer, owing to the requirements that must be possessed by the operator. It is hardly to be expected that a man not conversant with the subject of physics, electricity and mechanics, as well as a thorough knowledge of medicine, would make much of a success. For those who master the subject thoroughly, and give it time and attention, it is sure to give good returns upon the investment. A physician who is in general practice, however, who works from sixteen to twenty hours a day, it would seem an act of folly to make so large an investment in machinery that he will not be able to use enough to keep the bearings oiled and the dust off.

Few physicians have enough eases in their own practice to justify much of an outlay for equipment, and as he must compete with specialists who demand and get larger fees, he cannot possibly reject apparatus that has become obsolete, or buy new things that appear from time to time, owing to the lack of income. It is doubtful if the average practitioner, who is without mechanical training, could get satisfactory results from the use of this modern and delicate machinery, owing to a lack of time to become thoroughly familiar with it. There is another lamentable faet connected with the use of physiological therapy, and that is that it is being grasped and used by barbers and trained nurses, osteopaths, and many other classes of helpers, who hang on the ragged edge of medicine and eatch the erumbs from its table. They are encouraged by many well meaning physicians who sympathize with their up-hill struggle in making a living. Their confidence is being abused, however, as they are exploited as the patrons of the particular advertiser, and their names used to attract other patients. Manufacturers are maintaining elinies, where soft-pated physicians ean take their pay patients and initiate them into getting medical service for nothing. It rather seems that a patient who pays his doctor's bill needs a guardian these days, and it certainly shocks many of them when they are asked to pay.

This special field is filling rapidly, a large number of graduates going directly into this line of work, and, in a few years, when we begin to get the usual erop of ease reports from the "scientifie" members of the profession, recording failures by the hundreds, physiological therapy will be relegated to the background again for another period of "innocuous desuetude," only to be resuscitated by the labors of a few physicians who are especially fitted by nature for this exacting line of work. As soon as electrotherapeutics become popular, manufacturers exploit their apparatus and encourage the physician in the belief that in some way the instruments have a therapeutic effect, and the physician gets the idea in his head that if he has a ease on hand that puzzles him and will not yield to any treatment that he has been able to think of, he immediately thinks it a good plan to use some of the different forms of electric modalities, in the hope that if it does not do any good, it, at least, will not do any harm. The Indian medicine man doubtless has the same belief when he shakes his "rattles" over the patient's bed.

Success with physiological therapeuties means an accurate diagnosis and a correct theory of the pathological condition present; a complete knowledge of the different forms of electrical modalities, and the methods of developing their chemical, mechanical or physiological effects. It would seem very easy to acquire this knowledge, but, in practice, nothing is harder or requires more painstaking research, as few of the really successful electrotherapeutists have written books upon the subject, and their ideas are scattered in papers read at conventions and published in various scientific journals not ordinarily within the reach of physicians.

The class of eases handled by physiological therapeuties are: First, skin diseases, in which the x-ray has been found almost a specific; second, malignant diseases, by both the x-ray and the zine-mercury eataphoretic process; third, nerve degeneration eausing atrophy of muscles and nerves; fourth, pelvic diseases of women, who have been either unsuccessfully operated upon, or who refuse operation; fifth, ptosis of abdomen, dilated stomach, and prolapse of the pelvic floor;

sixth, urethral strictures and their various complications; seventh, neuralgias, neuritis, and pain of doubtful origin, classed usually under the head of neuresthenics.

The x-ray has been found very reliable in eczema, acne, psoriasis, mycosis, fungoids, hyperdrosis, lupus vulgaris and epithelioma. With this classification success can be predicted and failures are rare.

The x-ray is slowly but surely winning its way in the treatment of both sarcoma and carcinoma, and, as the technic is being improved and cases being treated
earlier, the percentage of successes is gradually climbing the scale. The indications are strong that we shall eventually find it the most successful method of
reaching this numerous class of sufferers.

In the nerve degeneration we have a potent remedy in the high frequency current, supplemented with suitable hygical, calisthenics, and drug medication. If the function cannot be restored in certain cases, at least the progress of the disease may be arrested, the power and strength of the muscles may be restored, and wonderful progress made in building up their bodily health.

In pelvic disease some of the greatest successes have been made in physiological therapeutics. By suitable combinations of modalities we are enabled to throw within and through the inflamed tissue collodial copper, which is one of the most powerful antiseptics and astringents known. We can sterilize great masses of tissue and do it without pain or danger, if a certain amount of brains is used with the treatment. We can render the mass acid or alkaline at will, and can stimulate every muscular fiber within and without the mass, by means of our oscillatory currents, promoting absorption. For instance, let us take a bad case of leucorrhea, with a chronic endocervitis. We drive large quantities of collodial copper into the tissue a few times and bring about a perfect cure. The muscles of the vagina can be developed by means of the bipolar electrode and interrupted currents, until the patient has excellent control of them, doing away with the symptoms of prolapse. We can take fistula of the anus, and where it is possible to follow the entire sinus with a copper wire, we can drive the collodial copper into the surrounding tissue and completely sterilize the tract and surrounding tissue, allowing cicatrization to take place. We can cut a stricture of the urethra with a negative electrode one inch in length in five minutes, without pain, hemorrhage, or discomfort. We can destroy a Bartholinian gland by means of a zinc electrode amalgamated with mercury under local anesthesia, or. if desired, sterilize it by means of the collodial copper. We can destroy granulations and stop hemorrhage from the uterus, where it depends upon polypii or granulation, and do it without pain or distress. The effect is not temporary, but is as effective and permanent as any other method of treatment. In ptosis of the abdominal contents and muscles, as stated elsewhere in the paper, this condition can be completely relieved. For pain, we find some of the numerous modalities are certain to give relief, except in those rare cases where it is of central origin, and, even in this class of cases, many things are possible if we have a sufficient number of cases at hand for further experimental work, as a suitable high frequency may be used that would produce a profound sleep.

It can be seen from this brief résumé of cases that physiological therapy has a field nearly all its own, as we are succeeding in a class of cases that have been the torment of the average physician's life, and, from the foregoing, it must be clear to all newcomers in this field that they can only be successful where this is their business, and where they will use all of their time studying and experimenting, in order that their work may be exact.

I have not begun to cover the field that physiological therapy is successful in, and it would be impossible to do so in the time assigned to me in this meeting, and for that reason I am perfectly willing to answer any and all questions that you choose to ask during the discussion.

CHICAGO SURGICAL SOCIETY.

A regular meeting was held Dec. 1, 1905, with the President, Dr. D. A. K. Steele in the chair. Dr. Louis A. Greensfelder reported a case of coxa vara and exhibited the patient. After giving the history of the case, present illness, examination, and measurements, the reporter spoke briefly of the etiology and treatment. He said that the cause of coxa vara may be due to late rachitis, juvenile osteomalacia or arthritis deformans. Frequently it is bilateral, and then it is associated with marked lordosis, simulating congenital dislocation of the hip. As to treatment, the patient was put to bed with Buck's extension, which was continued for four weeks, with the internal administration of small doses of phosphorus. In the last two weeks massage and electricity have been employed. Limp and walk have materially improved.

Dr. Wallacc Blanchard followed with the report of a case of coxa vara adolescentium, which presented many interesting features.

DISCUSSION.

Dr. Edward H. Ochsner said the two cases represented distinct types of coxa vara. The one demonstrated by Dr. Greensfelder impressed him as being a case of coxa vara due to traumatism. In Dr. Greensfelder's case the neck had not suffered much in length; it was almost normal except that it tilted and was horizontal instead of being at an angle of 129 degrees. There appeared to be less trouble also in the acetabulum. He thought the case shown by Dr. Blanchard was evidently one of static coxa vara.

Dr. L. L. McArthur said it looked as though the diagnosis between a fracture and coxa vera in Dr. Greensfelder's case was reasonable. Dr. Edwin W. Ryerson considered Dr. Greensfelder's case either one of fracture or separation of the head of the femur, and not a true case of coxa vara.

Dr. John L. Porter said that in a large number of cases, if studied carefully, there would be found a history of injury, but oftentimes only a slight injury. He had been surprised at the cases in which separation of the epiphysis of the femoral head had taken place with very slight traumatism. He had seen a number of cases of this kind of deformity at the Cook County Hospital, and in almost all of them the ages were between 12 and 20, most of them being young men. The history was that of slowly progressing disability, with marked adduction and a good deal of pain in the groin, or of slight traumatism followed by pain in the groin. While the patients thought they were well there was always some limping and marked adduction.

Dr. Daniel N. Eisendrath had seen the boy with Dr. Greensfelder and concurred with him in the diagnosis of true coxa vera. He thought if the members studied the x-ray print carefully they would see that such a position was well taken. The condition was to be seen better on the print than on the plate itself. He said it was a rather unusual point for an epiphyseal fracture to occur.

Dr. M. L. Harris could not agree with Dr. Eisendrath in regard to the interpretation given the skiagraph, as there was a distinct, sharply defined, marked angularity of the neck of the femur, a thing which one rarely or never saw in a case of true coxa vara. Dr. Wallace Blanchard disagreed with Dr. Eisendrath that separation occurred through the epiphysis. His experience in fractures close to the epiphysis was that they never occurred where they should. Of some 800 cases of osteoclasis, in two-thirds of which the epiphysis was under pressure, in only one was there separation of the epiphysis. If there was any opportunity at all the fracture would occur outside and away from the epiphysis rather than in the line of the epiphysis.

Dr. Daniel N. Eisendrath presented a patient upon whom he had operated for right-sided subphrenic abscess following appendicitis. He also exhibited a case of extensive macroglossia in a boy of four, whose tongue at the time of birth was so large that it protruded from the mouth. The case was treated by cauterizing all of the superficial vesicles with the Paquelin cautery, instead of performing a radical operation of extirpation of the entire lymphangiomatous area. Since this

operation the tongue had become much smaller. Dr. Eisendrath also showed a ease of advanced Raynaud's disease, in which amputation of one toe on the right foot and three toes on the left foot had become necessary on account of gangrene. He then presented a patient from whom he had removed a right-sided branchial cyst about two months previously, also a patient with an impacted fracture of the neck of the humerns. Dr. Eisendrath's cases were discussed by Drs. L. L. McArthur, A. J. Ochsuer and the discussion closed by Dr. Eisendrath.

Dr. Alexander Hugh Ferguson read a paper entitled Ischemie Atrophy, Contractures and Paralysis.

The author said that ischemic atrophy and paralysis, being the changes which occur in muscles from which the blood supply is more or less cut off, may be due to 1, arterial, depending on two conditions: (a), interruption must be nearly complete; (b), interruption must be of more than two or three hours' duration, otherwise it is easily tolerated. Sometimes there is incomplete interruption for several days. 2. An interrupted venous return, the causes of which are: I, cardiac embolus; 2, thrombus due to syphilitic endarteritis, or following acute infective diseases; 3, Raynaud's disease, changes in vessels due to defective nerve innervation; 4, direct injury to a vessel; 5, cold; 6, most common of all, tight splinting, to which the author referred at eonsiderable length. The symptoms of ischemie atrophy were discussed in detail.

As to the course, this depends on the duration of the primary ischemic condition. When cramps and rigidity have set in probably no immediate recovery of the muscle is to be looked for, but short of this the muscles may readily recover if the blood supply is restored.

After reviewing the most prominent points relating to ischemia, the author reported two recent cases in which favorable results followed operative treatment.

Dr. Ferguson also showed improved clamps and artery forecps. He said they were small angiotribes, and he had used them a year before he had the instrument makers make them in large numbers. Surgeons were now using them. Dr. A. J. Ochsner, in discussing Dr. Ferguson's paper, said he had seen cases of ischemic atrophy, but had never treated any of them surgically.

A regular meeting was held Jan. 5, I906, with the president, Dr. D. A. K. Steele, in the chair. Dr. Charles Adams reported the following cases: 1, Popliteal aneurysm; 2, hydronephrosis and appendicitis; 3, hydronephrosis; 4, renal calculus, nephrolithotomy, cystonephrosis; 5, gonorrheal pyelitis, nephrotomy, nephrolithotomy, nephreetomy.

Dr. D. A. K. Steele reported the case of a man, 54 years of age, well-digger by occupation. There was no venereal history. Four years ago patient noticed a round, semi-solid tumor on his back, to the right of the spine, about the third dorsal vertebra. At this time he suffered no inconvenience from the growth. On palpation there was no pain nor signs of inflammation. From the time the growth was first observed it had slightly increased in size until the end of the first year, when it was about the size of a large orange. This was three years ago. For the past two years the tumor had grown more rapidly, without causing any pain or inconvenience until within the last three months, when it was noticed that the growth increased rapidly and began to cause some inconvenience from It was twenty-one inches in diameter and sixty-one inches in circumference; its long diameter was nineteen and one-half inches, transverse diameter ten inches. On account of the size the tumor had attained and the fact that about two weeks previously a small superficial ulceration appeared, and that upon its surface a number of superficial veins became quite prominent and tortuous, the question of diagnosis came up. When the speaker first examined the patient the tumor looked like an ordinary lipoma developing in the back, and the patient consulted him on account of this small superficial ulceration, which he believed to be due to atrophy of the skin from great distention. Careful examination showed a number of large venous trunks running over the surface of the tumor, some of them as large as the finger. The growth presented the characteristic feel of a fatty tumor. It was lobulated. The next day Dr. Steele excised the tumor by lifting up the tumor mass and transfixing its broad pediele with a very long pediele-needle, threaded with a rubber ligature, which was tied around the two halves of the base, permitting a bloodless excision of the tumor, which weighed eleven and one-half pounds, and on section proved to be a telangiectatic lipoma. The wound healed by primary union. It was subsequently learned that the patient returned to his home at the end of one week.

Dr. Charles Adams exhibited abdominal retractors, which he had used to great advantage for a considerable time.

Dr. A. E. Halstead reported a ease of diverticulum of the esophagus. He also reported two cases of unusual forms of hernia.

DISCUSSION ON THE CASES OF DRS. HALSTEAD AND STEELE.

Dr. A. J. Ochsner said that Dr. Steele's case of tumor of the back was interesting from a diagnostic standpoint. He believed that the differential diagnosis in this case, between myxosareoma and sarcoma originating either from the fascia or from the periosteum, was to be left open until after the operation. He would be greatly interested in hearing the ultimate diagnosis, although it seemed fairly certain that the tumor must be a lipoma. The cases of Dr. Halstead were also very interesting from the standpoint of diagnosis. The differential diagnosis must be made between the condition which was found and a hernia which had been reduced and had remained strangulated from one of several reasons, either from the presence of a cicatricial band, a volvulus or a piece of adherent omentum, or a condition which he had encountered several times—hernia of a gangrenous appendix, which had been reduced and which left the condition of the patient very much like that which had been described. He had encountered several cases similar to the one described, and in one case he was not wise enough to make a diagnosis of the second strangulation. Dr. Halstead was to be congratulated on his diagnosis and treatment in both cases.

Dr. L. L. McArthur spoke with reference to the use of subnitrate of bismuth in large doses, such as are recommended for the skiagraphic outlining of diverticula of the esophagus. He recalled the fact that at one time, when he was working along chemical lines, he was requested to examine the subnitrate of bismuth sold in the drug stores of Chicago. He examined twenty-one specimens, and of these eleven contained arsenic, some of them in such abundance as to really be dangerous. In other words, in giving an emulsion of four ounces of subnitrate of bismuth, unless one took pains to avoid using the commercial product and employed the C. P. variety, one might have arsenical poisoning of considerable severity.

Dr. Bayard Holmes reported a case of tubercular peritonitis with an enormously distended gall-bladder.

DISCUSSION.

Dr. S. C. Plummer remarked that the question of acute tubercular peritonitis following some injury was very interesting to him in the light of a case which he had a year or two ago. A man received a very hard kick in the right iliae region of the abdomen, and an hour or so before he saw him there supervened a tympanitic condition, which was more marked in the region of the contusion, but involving the whole abdomen. He thought, in all probability, in view of the severity of the injury, and tympanites following so rapidly, there was a rupture of the intestine or some other severe intra-abdominal injury. He made a laparotomy and found no result of the recent injury. What he found was an omental adhesion, which was probably the result of the previous appendicitis for which the patient had been operated upon, the appendix having been removed at the time. The man made an immediate recovery, although there seemed to be more paresis of the bowel than was ordinarily the ease after an abdominal operation. About two months afterward he was brought to the hospital again, and eame into the service of Dr. W. E. Schroeder. At this time he had symptoms of acute intestinal obstruction. Dr. Schroeder performed a laparotomy and found very extensive tubercular peritonitis, from which the man shortly afterward died. At

the laparotomy, immediately after the injury, he examined all the abdominal contents and did not find any sign whatever of tubercular peritonitis, so that it seemed that the injury or the first laparotomy was the ctiologic factor in the causation of this tubercular peritonitis.

Dr. Charles Davison said that Dr. Holmes' case reminded him of one he saw in the County Hospital a number of years ago, and which taught him a good lesson in the diagnosis of gallstone colic. The patient was in the medical service of Dr. Billings and was referred to the surgical side with a diagnosis of cholecystitis, with gallstones, a diagnosis that none would question under any circumstances, inasmuch as the symptoms were as typical of a case of cholecystitis, with gallstones, as they possibly could be. The patient had had typical attacks of gallstone colic when in the hospital, where they could watch him closely. abdomen was opened with the expectation of finding a distended gall-bladder with stones in it. He could feel a tumor from the outside before operation. After the abdomen was opened he found a collection of fluid below the liver, above the colon, to the outside of the gall-bladder, accompanied by slight adhesions, the fluid amounting to about ten ounces. The gall-bladder was not thickened nor distended and contained nothing. The cavity which he opened and drained was studded with miliary tubercles to the naked eye, but he could find nothing of the kind anywhere else in the immediate neighborhood in the abdomen. The cavity was drained and the patient got well temporarily, so as to leave the hospital. He had not the general appearance of a tuberculous patient. No miliary tubercles were found in any other part of the body. The patient was in apparently good health.

Dr. L. L. McArthur said we might hope in the future to operate on cases of tubercular peritonitis far more early than in the past, perhaps before the period of ascites had developed. By the removal of the enlarged lymphatic glands, that not infrequently could be clinically palpated, we might cure the patient symptomatically and prevent those later stages which were so frequently hopeless. He, too, had furnished evidence which, to the unbiased mind, went to prove that occasionally primary peritoneal tuberculosis resulted from the swallowing of the bovine bacillus. Koch had lately turned so squarely against his former dictum as to say it never produced a human tuberculosis. Nevertheless, cases were now to be found in the literature, as quoted by Fürst. He thought if we had the opportunity to make earlier operative interference we could save many cases now lost.

Dr. Daniel N. Eisendrath said the case of Dr. Holmes brought up the point of the acute onset of tubercular peritonitis. He had met with two such cases. One was a young man whom he saw last spring on account of what appeared to be a tumor in the abdomen. The patient stated that two months previously he was taken sick at Indianapolis with a sharp pain in the right iliac region, and the physician who treated him for appendicitis told him there was no question but that he had appendicitis. Eisendrath saw the patient two months later, when the patient had a prominence which fluctuated distinctly to the right side at about the level of the umbilicus. He could replace it and palpate it bimanually. A tentative diagnosis was that the tumor had no connection with the appendicitis, and it was thought that the case was one of hydronephrosis or mesenteric cyst. In opening the abdomen a large abscess cavity was found, which was limited to the median line, extending downward to the region of the appendix, backward as far as the midaxillary line and upward to the middle of the liver. The case proved to be one of encapsulated tubercular peritonitis, which had begun acutely with a sharp pain. A second similar case was that of a woman whom he saw in consultation. This case also proved to be one of typical tubercular peritonitis.

Dr. A. J. Ochsner cited a particularly interesting case. He had operated upon a patient for gastric ulcer, with pyloric obstruction. There was at this time no sign of tuberculosis of the peritoneum, but within six months the patient returned with symptoms of obstruction, and it seemed to him that something had gone wrong with the operation, but upon opening the abdomen it was found that

these symptoms of obstruction were due to a very violent diffuse tuberculosis of the peritoneum, from which the patient had recovered under treatment. The observations of Mayo in regard to tubercular peritonitis and tuberculosis of the intestines were of great value, because they had brought out elinically the fact of infection through the intestines. The eases of patients that Dr. Mayo reported all came from a portion of the country where pulmonary tuberculosis is exceedingly rare. They practically all came from families in which there was no tuberculosis; they all came from families in which raw milk was used to a great extent, and these patients had nothing to indicate that they had tuberculosis except the local condition. Again, practically all of them recovered as soon as the abdomen was opened and drained, and they had remained well as long as they took sterilized milk afterward. This, he believed, was the strongest anti-Koch demonstration that had been made.

Dr. D. A. K. Steele said that within the last two weeks he had operated on two cases of tubercular peritonitis. A patient upon whom he had operated thirteen days ago was a young Assyrian woman who had many irregular, nodular tumors which could be left in the abdomen. When he opened the abdomen he found the mesenteric glands were enlarged, together with some thirty or fifty others, which were the size, some of them, of a hazlenut, while others had attained the size of a hen's egg. It seemed rather formidable to shell out all of them, as the intestines were intensely injected. There was no evidence, apparently, of tubercular peritonitis, but he took it to be a tuberculosis of the mesenteric glands, involving all the glands in a profuse manner. He shelled out one of the glands for diagnostic purposes, closed the abdomen and left the other glands in situ.

Dr. A. E. Halstead said that he reported a case three years ago, at a meeting of the American Medical Association, of uniliary tuberculosis of the abdomen on which he had operated. A diagnosis of acute appendicitis had been made. A large number of enlarged mesenteric glands were found, so many that it was not thought wise to remove them. Some of these glands were as large as a hen's egg, and the abdominal cavity was studded with tubercles. The patient finally recovered, after about three months, and was sent to Colorado. Later she developed a postoperative hernia. On returning to Chicago at the end of three years she had apparently recovered from the tuberculosis. He operated on her for the hernia, inspected the abdominal eavity at the time and was unable to find even a trace of the previous peritoneal tuberculosis, excepting that here and there was a small calcarous body representing a gland. She was absolutely free from all evidence of tuberculosis. This case would indicate that operative treatment, as far as removing the glands was concerned, was not so essential. It would seem to him to be an operation of great magnitude to remove all the glands, and if these patients recovered without such an operation, by simply opening the abdomen and treating the case as one of tuberculosis from a hygienic and dietetic point of view, it would seem that operation on these cases might not really be necessary.

Dr. Holmes, in closing the discussion, stated as his belief that the big gall-bladder in his ease had produced in the course of less than a weck enormous aseites by pressure upon the portal vein, and he thought that the ascites was a predisposing factor toward the localization of the tuberculosis in the peritoneum, and that the peritoneal tuberculosis was only a part of a general miliary tuberculosis, which had showed itself in the lung and in the capsule of the liver and genitorurinary organs.

PARTIAL GASTRECTOMY FOR CARCINOMA OF THE STOMACII.

Dr. D. W. Graham exhibited a specimen taken from a man 60 years of age who gave a history of gradually failing health for six or nine months previous to operation. There was apparently no obstruction of the stomach, but there was greatly disturbed nutrition and digestion, stasis and occasional vomiting. Operation was undertaken, first, as an exploration. A tumor could be felt through the abdominal wall, and it was found to involve the stomach some little distance away from the pylorus and implicated the anterior wall largely. There were no adhe-

sions. The tumor was freely movable, and as there were no adhesions he considered it a good case for partial gastrectomy, which was performed. The patient died on the fourth day after operation from peritonitis.

ENLARGED MIDDLE PROSTATIC LOBE.

Dr. Graham exhibited an unusually large prostatic middle lobe. This enlarged middle lobe had not been suspected as the cause of the prostatic obstruction before the operation. The man was 62 years of age and had prostatic trouble for two or three years, so that he had to resort to catheterization most of the time in order to pass urine. Examination through the rectum showed some enlargement and bagging down of the bladder, that is, the postprostatic pouch which is usually found in these cases. This was removed, after which he explored through the bladder and through the rectum, and concluded to leave the lateral lobes, which did not seem to be much enlarged. It was surprising to note the changes that took place after he had removed the tumor. It was simply snipped off; it stood up as a sessile mass.

ABSCESS OF THE PROSTATE.

Dr. Graham reported a case of abscess of the prostate in a man 63 years of age who had been troubled for eight or ten years with frequent urination. Some months before the operation he had passed pus with the urine, not mixed with the urine, as is usually the case in cystitis, but pus would be passed following urination. The prostate was very large, and when he removed it the left lobe had an abscess in which there was an opening as large as a lead pencil nearly on the surface, looking toward the bladder, the upper posterior surface, and a cavity into which the opening led, containing half a dram or more of pus.

Dr. A. J. Ochsner, in connection with the specimen exhibited by Dr. Graham of carcinoma of the stomach, demonstrated and illustrated some points in the technic of the operation.

EXHIBITION OF CLIPS.

Dr. Jacob Frank exhibited small clips which he saw used in Landau's clinic while on a visit to Berlin. These clips may be used for fastening sheets to the patient and preventing them from being displaced. There were many opportunities presented for the use of these clips in surgical work. For instance, in the removal of the prostate, after the sound was removed from the bladder, the scrotum could be fastened to the abdomen by one of these clips; the clip kept it out of the way and there was no danger of injuring the testicles. He also found these clips useful in making a mastoid operation, clipping the ear to the cheek. He recommended their use in surgical work.

A regular meeting was held Feb. 2, 1906, with the President, Dr. D. A. K. Steele, in the chair.

ESOPHAGEAL POLYP REMOVED BY OPERATION.

Dr. W. R. Cubbins, by invitation, reported a case of esophageal polyp removed by operation, and exhibited the specimen. The patient was 45 years of age, married, occupation roofer. He had been previously healthy; he gave no history of any disease. During the administration of an anesthetic for the reduction of a dislocated shoulder joint the patient vomited, and during this act the tumor was extruded from the mouth, which was grasped and measured, so that it protruded four inches outside the mouth. Patient objected to removal of the tumor at this time. After this it was necessary to anesthetize patient again for another operation, and several attempts were made to remove the polyp by introducing a forceps down through the esophagus, but were unsuccessful. Shortly after this patient began to develop symptoms of obstruction. The tumor seemed located at the sternal notch. For over half an hour it was impossible to get fluids up or down. Patient could neither vomit nor swallow. At the end of three-quarters of an hour the tumor seemed to pass down, so that the patient was again able to swallow water or milk and other liquid food. He had become very much emaciated when he appeared the second time. He was now prepared for an operation on the

neck, and attempts were made to nauseate him so that he would throw up the tumor. His stomach was filled with water; he was given some apomorphia, but no fluids came up. He was promptly anesthetized, and attempts made to draw the tumor from the throat. Dr. William E. Schroeder and the speaker did a lateral esophagotomy, after having located the esophagus with the stomach tube; they found the tumor situated on the anterior portion of the esophagus, with the pedicle a little to the left of the median line just above the larynx and cricoid cartilages, and extending down into the esophagus for about seven inches. It was ligated and tumor removed, and the wound closed with packing. The tumor measured sixteen centimeters in length, just above the lower end it was rather conc-shaped, and was five centimeters in diameter, and at the pedicle one centimeter. It weighed 210 grams. The lower end was eroded when they removed it. When it was first extruded, six months before, there was no erosion of the lower end. The tumor was exhibited.

DIAGNOSIS OF ESOPHAGEAL LESIONS.

Dr. W. B. Sippy read a paper on this subject. First, he took up functional and anatomical diseases of the esophagus, one of which is related to sensation, the other to motility. Sensory and motor disorders were discussed at length. As to ulcer of the esophagus, it seldom occurred except in association with carcinoma. There have been less than forty cases of peptic ulcer of the esophagus reported. Ulcer of the esophagus may be readily detected by the esophagoscope. By far the most common and serious disorders of the esophagus are related to conditions producing obstruction to the lumen of the tube. The early diagnosis of esophageal obstruction is very important. The first symptom is usually discomfort or pain occurring during the ingestion of food.

He exhibited a specimen of dilatation of the esophagus due to cardiospasm, showing a gastroenterostomy, which had been performed for the relief of an alleged pyloric stenosis. Tumors of the esophagus may be benign, but are usually carcinomatous. Sarcoma may invade the esophagus from surrounding structures. Cicatrix, causing esophageal stenosis, is usually associated with a history of swallowing caustic acids or alkalies, although in some cases the incident is forgotten, and careful questioning is necessary to bring out such history. The history, course of the disease, and passage of bougies are usually sufficient for the diagnosis of cicatricial stenosis of the esophagus. If not, the esophagoscope may be used to advantage.

Diverticula of the esophagus are pouch-like sacculations of a portion of the circumference of the tube. Three forms based on etiology are recognized: Pressure diverticula, traction diverticula, and traction-pressure diverticula. These forms were discussed at length. Spasm of the lower end of the esophagus, if long continued, results in dilatation of the esophagus, and unless relieved, emaciation and finally death from starvation are likely to occur. Although not many cases are reported in the literature, the condition is not rare, and because of its seriousness the clinical picture should be more generally known.

In discussing the case of Dr. Cubbins and paper of Dr. Sippy, Dr. D. W. Graham said that one striking point was the little disturbance which the tumor in Dr. Cubbins' case caused before it became so large. He had derived benefit from Dr. Sippy's paper. He had seen one of the cases referred to by Dr. Sippy in consultation, only once, however, and had advised the use of the stomach tube. The patient subsequently fell into the hands of Dr. Sippy, who cured her of the cardiospasm, which he and her former attending physician had failed to recognize.

Dr. William E. Schroeder said the maceration at the end of the tumor in Dr. Cubbins' case was due to trauma, as the first time the tumor was out its end was smooth. The diagnosis of such tumors is usually made by accident or not at all. As to Dr. Sippy's paper, he would like to say a word with reference to trauma of the esophagus. About eight years ago a recent graduate decided that it was necessary to wash out his brother's stomach. Accordingly he procured a soft stomach tube, and proceeded to pass it in the case of a young man, 28 years of age, who, in having his stomach washed out, expressed great pain im-

mediately the tube came to the cardiac end of the esophagus, and the fluid was passed it. The case came to postmortem in short order, and it was found that there were no pathological changes in the lower part of the esophagus, but that the tube had perforated the esophageal wall and the left thoracic cavity was filled with water. Microscopical examination showed the csophagus was perfectly normal; the stomach was normal. Patient had caten something which did not agree with him, and he thought it was the proper thing to have his stomach washed out. Here was a serious accident following a simple procedure.

Dr. Daniel N. Eisendrath asked Dr. Sippy in regard to the practical value of the esophagoscope; and whether any microscopical examinations had been made in these cases of cardiospasm. He also asked whether the administration of large quantities of bismuth in these cases and of getting an x-ray shadow of the spindle-shaped dilatation would not be a great aid?

Dr. Louis Greensfelder said the swallowing of foreign bodies, such as fishbones, small particles of chicken bones, etc., not infrequently caused abrasions of the nucous membrane of the csophagus, and produced esophageal abscesses. Another point was the occurrence of typhoidal ulcers at the lower portion of the csophagus, which Dr. Sippy omitted to mention.

Dr. Sippy, in closing, said. as to the use of the csophagoscope, that its chief value was for the removal of foreign bodies. This instrument, in the diagnosis of lesions, afforded relatively little aid, particularly with regard to the diagnosis of diverticulum of the esophagus. As to its value in differentiating cicatricial stenosis from carcinoma of the esophagus, in most cases a diagnosis could be made without the use of the esophagoscope, but there were cases in which a good deal of difficulty might be encountered, and, in all instances, the esophagoscope was likely to render diagnosis more positive. He said that microscopical examination had been made when cardiospasm was present. Various theories had been advanced as to why idiopathic dilatation of the csophagus occurred. Mikuliez and Meltzer brought forth the idea of primary spasm of the cardia. Rosenheim believed that atony of the wall of the esoplagus or primary weakness of the wall of the esophagus was responsible for the development of the dilatation in certain cases. The proper tonus being absent, rapid eating caused undue filling of the esophagus, resulted in sacculation and the lodgment of food; the accumulation of food irritated the wall of the esophagus, which was likely to result in secondary spasm of the cardia. Kraus advanced the theory that degeneration of the pneumogastric nerve was a cause of idiopathie dilatation of the csophagus.

PANCREATIC CYST.

Dr. Edward H. Ochsner exhibited some concretions which were found in a pancreatic cyst. He also exhibited a trocar which he had used for four years. The reason why this trocar always works is because both the tube and the stylet are made of gun-metal and are made with the same care and in the same manner as an ordinary all-metal syringe, while the ordinary trocars on the market depend for their vacuum-producing power upon packing, which is ruined by a few boilings. The instrument exhibited can be boiled with all the other surgical instruments, and after having been used a thousand times, is working just as well to-day as it did when it was new.

DIAGNOSIS AND TREATMENT OF COXA VARA.

Dr. John L. Porter discussed this subject. The discussion was further participated in by Drs. Wallace Blanchard, Louis Greensfelder, and the discussion closed by Dr. Porter.

Dr. D. A. K. Steele exhibited photographs of a case of cavernous lipoma before and after operation, which he reported at a previous meeting. He also showed the tumor he had removed. He reported an interesting case of single kidney in the median line, with two ureters. This case was discussed at length by Dr. F. Kreissl, after which the Society adjourned.

FULTON COUNTY.

The thirty-third meeting of the Fulton County Medical Society convened in the parlors of the Churchill House in Canton, May 1, and was called to order by Vice-president Chapin at 1 o'clock p.m. Minutes of previous meeting were read and approved. Members present: Harrison, Sutton, Blackstone, Robb, Stoops, Oren, Scholes, Blackburn, Chapin and Ray.

Dr. Stoops, auxiliary committeeman on legislation, reported that the army bill was in the hauds of the chairman and its future lay with him. The question of establishing a new cabinet office of public health should be urged wherever possible, also government regulation of indigent consumptives. Drs. Coleman and Scholes moved that Dr. Stoops draw up resolutions regarding legislation and present them after the literary part of the program. Dr. Coleman presented a very interesting paper on gallstones, which was freely discussed by all present.

Dr. Oren read a paper on "City Ethies," ealling forth general discussion. Drs. Stoops and Sutton presented the following resolutions, which, on motion of Drs. Blackburn and Scholes, were adopted:

"Resolved, That the Fulton County Medical Society hereby indorse the original pure-food bill as passed by the Senate and recommend its adoption by the lower house without change or amendment; and

"Resolved, That we regard the House committee amendment providing for an expert commission as an effort to thwart the original intent and purposes of the bill and as dangerous, as by this amendment the matter of food inspection is taken from the hauds of the Bureau of Chemistry and placed in the hands of a few chosen chemists; and

"Resolved, That a copy of these resolutions be forwarded to our congressman, Hon. G. W. Prince, and that we respectfully request him to support the original bill and to oppose said amendment."

The secretary read resolutions adopted by the Pike County Medical Society condemning the reduction of examining fees by the life insurance companies. Drs. Oren and Stoops moved that we adopt the resolution as expressing our position on the question. Carried. Dr. E. E. Davis, of Avon, asked permission to join the Knox County Medical Society, because it is impossible to attend in this county without losing too much time. The secretary was instructed to grant the request.

Drs. Blackstone and Scholes moved that our representative support the protective feature to be brought up at the state meeting.

D. S. Ray, Secretary.

LIVINGSTON COUNTY.

The Livingston County Medical Society held its tenth semi-annual meeting in the city hall in Pontiae, April 19, with thirty members present. Dr. Lewis, of Fairbury, was elected president; Dr. Baker, of Pontiac, vice-president, and Dr. Ross, of Pontiae, secretary. Five new members made application—Drs. Kuhn, of Fairbury; Morgan, of Cornell; Barr, of Dwight; Kilbourne, of Ancona, and Marsh, of Odell. They were elected to membership in the society. The charges of unprofessional conduct which had been preferred against a member at the last meeting were laid on the table for one year. Dr. Rabe, of Dwight, petitioned the society for a rehearing in his case and the petition was laid on the table for a year. The society passed a resolution indorsing the wise, liberal and self-sacrificing policy of the Chicago Tribune in its stand against fraudulent "patent medicines" and nostrums.

The society passed a resolution condemning the cut in the prices of medical examinations and urged the members to charge \$5.00 for all old-line insurance examinations and from \$2.00 to \$3.00 for all fraternal insurance examinations. Dr. N. M. Otis was elected the delegate of this society to the state convention and Dr. P. C. Wikoff the alternate.

Dr. J. D. Scouller, Jr., read an interesting paper on "Tuberenlosis of the Kidney," showing microscopic slides. A free discussion followed. Dr. G. C. Lewis, of Fairbury, read a paper on "Moral Standard of the Medical Profession." This paper was far above the average of medical literature heard in county societies and was discussed by a number of physicians. The annual address of the president was delivered by the retiring president, Dr. E. H. Fitzpatrick. It contained much excellent thought and showed a familiarity of the author with subjects which are too often neglected by members of our profession.

Dr. J. N. McCormack, of Bowling Green, Ky., being present, favored the society with a thirty-minute talk, which was greatly appreciated by the society.

The evening session was held at the Methodist Church, where Dr. McCormack addressed about 200 citizens. His address was very interesting and instructive, both to the medical profession and to the laity. We would only be repeating what has so often been said in the Journal about Dr. McCormack's lecture if we should write a page article about what the profession and people think of it here.

Our visitors from outside of our county were Drs. Shirm, of Chenoa; Culberson, of Piper City; Ensign, of Rutland; Dieus, of Streator, and McCormack, of Bowling Green, Ky.

John Ross, Secretary.

MACOUPIN COUNTY.

The Macoupin County Medical Society met in the hall of the Business Men's Club of Gillespie with twenty-five members present. Among those present were Drs. D. A. Morgan, Nilwood; E. A. Bleuler, H. S. Collins, L. H. Corr, J. P. Denby, C. J. C. Fischer, J. Palmer Matthews and J. M. Barcus, of Carlinville; E. B. Hobson, J. M. English, Charles D. King, of Gillespie; H. A. Pattison, of Benld. New members elected were J. H. Riffey, Girard; J. H. Davis, Carlinville; Thomas H. Hall and William M. Gross, Gillespie.

At the morning session the following resolutions were passed in memory of two deceased members:

"Whereas, By death has been removed as a member of this society Dr. Charles Ed Smith; and

"Whereas, By his removal this society has lost one who was a charter member; and

"Whereas, By his death his family has lost a faithful and generous supporter; therefore be it

"Resolved, That we tender the bereaved family our sincere sympathy and that a page of the records be set apart to his memory."

"Whereas, By death has been removed as a member of this society Dr. George Herbert Gilson; and

"Whereas, By his removal this society has lost a member who was at one time its efficient secretary; and

"Whereas, We realize his family has lost a faithful, generous supporter; therefore be it

"Resolved, That we tender the bereaved family our sincere sympathy and that a page of the records be set apart to his memory."

A resolution of sympathy was extended to Dr. Gross in his recent sad bereavement by the death of his beloved wife.

The Pike County Medical Society sent resolutions condemning the action of the large life insurance companies in reducing the fees from \$5.00 to \$3.00. The society indorsed the resolutions, believing it to be false economy.

After an excellent banquet, prepared by the local fraternity, the society listened to a lecture by Dr. Walter O. Ryan, of Springfield, on "Gallstones." Twenty cases were reported and specimens exhibited. The symptoms are recurring

attacks of pain and bilious indigestion. Only 20 per cent. of cases are jaundiced. The jaundice is produced by large stones in the common duet obstructing the flow of bile. Chills and fever are caused by infection of the gall-bladder, extending through the common duet. Excellent results follow operation and drainage.

A paper on some cases of acute of obscure etiology was read by Dr. Charles D. King, of Gillespie. Dr. Palmer Matthews reported a circular of instructions by Colonel Gorgas, of the Panama Canal Zone, to the sanitary inspectors. Pictures of mosquitoes in various stages of development were shown and the history given of their modes of conveying infection of malaria and yellow fever.

A manimous resolution was carried thanking the local physicians for their hospitality. Officers for next year were elected as follows: President, Dr. English; vice-president, Dr. J. Pitt Matthews; secretary, Dr. E. A. Bleuler; treasurer, Dr. Palmer Matthews.

MERCER COUNTY.

The Mercer County Medical Society held its annual meeting in the Courthouse in Aledo, May 1, 1906. The president, Dr. H. S. Allen, not being present, Dr. H. E. Morrison was elected president pro tem. There were present Drs. Morrison, Sells, Kleinsmid, McKelvey, Hainline, Boyer, Ramsey, McClanahan, Mackey, Miles, Winbigler, Moore, Hamilton, Burtnette and O. B. Will, district councilor, of Peoria.

After transacting routine business and some informal discussion, the society adjourned to the Merchants' New Hotel, where a sumptuous banquet was prepared for the members and their wives. Covers were laid for twenty-two.

The society was called to order at 1:30 p.m. Drs. J. E. Kleinsmid, Boyer,

Porter and Hamilton were duly elected to membership.

The following officers were elected for the ensuing year: President, V. A. McClanahan, Viola; vice-president, Walter Miles. Viola; secretary-treasurer, I. E. Burtnette, Joy; board of censors, J. E. Kleinsmid, Aledo; W. N. Boyer, Aledo; G. H. Moore, Joy; delegate to state meeting, V. A. McClanahan; alternate to state meeting, M. G. Reynolds.

B. R. Winbigler read a very able paper on "Hysteria." J. D. McKelvey gave an interesting paper on "Gastritis." After these papers had been discussed O. B. Will closed the program with an address on "The Benefits of Organization," which was very instructive and entertaining. A vote of thanks was extended to

Dr. Will by the society.

The fee bill was taken up and thoroughly discussed, and by a vote of the society it was decided that \$1.50 should be the minimum fee for day visits and \$2.00 for night ealls in all cities and villages of the county for local physicians, and that mileage be charged in all obstetrical calls in the country. Society adjourned to meet in Viola on the second Tuesday in October, 1906.

I. E. Burtnette, Secretary.

MORGAN COUNTY.

SOCIETY FOR THE PREVENTION OF TUBERCULOSIS IN JACKSONVILLE,

A committee appointed by Morgan County Medical Society made arrangements and called a meeting at Public Library, May 1, 1906, at 8 p. m., for purpose of organizing a society for prevention of tuberculosis. Dr. Charles Mix, of Chicago, addressed the meeting on "Tuberculosis." After the address a society was organized to affiliate with State Society on Tuberculosis. A constitution and by-laws were adopted. The society will be known as Jacksonville Society for the Prevention of Tuberculosis.

The following officers were elected: President, Andrew Russell; first vice-president. Dr. Josephine McMilligan; second vice-president, Rev. R. O. Post; secretary, Dr. R. O. Hardesty; treasurer, Mr. Edward Crabtree, banker; medical director, Dr. J. W. Hairgrove; executive committee, Thomas Worthington, W. E. Veitch, E. M. Vasconcellas, Mrs. Joseph Heinl, Mrs. Carl E. Black.

T. O. Hardesty, Secretary.

The May meeting of the Morgan County Medical Society was held at the library, May 10, 8 p. m., twenty members present. Dr. Geo. Shambaugh of Chicago, by invitation, spoke on the relation between Rhinology and Otology. He said in part: Everybody recognizes some relationship between these two branches of study, but the exact relationship is known only to specialists, and to them only of recent years. People apply for help for the eye earlier than for the ear; hence the oeulist entered the field as a specialist. Beyond the removal of foreign bodies and large polypi, little was done with the ear. Laryngology developed rapidly after the introduction of the laryngoscope. Rhinology is a comparatively recent seience. The men who developed this science are still living. Most that is valnable has been learned within the last twenty-five years or so, and yet rhinology, though much younger than otology, has, on account of its relationship to the latter, assumed tremendous importance of late years. The important chapter in the science of rhinology is the establishment of the relationship between the milder or so-ealled catarrhal forms of inflammation of the middle ear, and eonditions in the naso-pharnyx, frequently overlooked, or considered unimportant.

After reviewing the anatomy of the ear and the different stages of inflammation frequently found therein, the speaker proceeded to show that it was not the chronic or the suppurative inflammations of the middle ear that were the most important from the physician's standpoint, because these were generally beyond relief. It was in the suhaente cases of otitis media or tubal catarrh in the young that are to be henefited. This form of tubal catarrh heeoming ehronic, is the most common eause of deafness in middle life. It begins in childhood and ean only be treated to advantage at that period. The most prolific eauses of this form of disease are: First, enlarged faucial tonsils, always the seat of disease. Second, and most important, enlarged pharyngeal tonsils or adenoids. These press on the mouth of the Eustachian tube, and are even a more common cause of deafness than enlargement of the faueial tonsils. Adenoids cause trouble long before they are large enough to eause obstruction in breathing, and an early removal will save the hearing of many a child. These cases are frequently overlooked till much damage is done to the hearing. The chronic otitis media of middle life is not relieved by treating the nose. From five to fifteen is the time of life when the damage is done, and relief must be obtained at that age or not at all. One of the commonest symptoms of tubal eatarrh and its aecompanying eause is reenrrent lack of attention to what is said. At times there may even be an apparent stupidity, which comes from the child's inability to hear what is said at that time. This is especially noticeable in school. The teacher may complain of it. At other times, when the tube is open, the child hears better. It is at this stage that the general practitioner should be on the watch for recurrent colds, enlarged tonsils, etc., even before the stage of mouth breathing.

Dr. Adams said that children should be examined in school by simple tests of sight and hearing and reports made to parents and superintendent of all defects. At present only aggravated cases of adenoids receive attention in most communities.

Dr. Norris read a paper on interne work in Mercy Hospital, Chieago. He said that students desiring interneship generally form themselves into quiz classes, wherein they thoroughly review the entire four years work. They generally remain in the city during the summer and complete all senior dispensary work as far as possible, in order to give as much time as possible to review during the coming year. The examination lasts three days and the six highest are appointed. The first three begin their work the following June, the other three in December. The service lasts eighteen months, divided into periods of two months each, with complete change of service in each period. Every six months three men go out and three new ones enter.

Mercy Hospital, in the year 1904, admitted 2760 patients, of which more than half were surgical. The first six months the externe, as he is called, must pay his own expenses, and his work is mostly laboratory work and septie dressings.

He has to examine thirty to fifty specimens of urine a day, and sometimes stomach contents; he is second assistant in postmortems, and occasionally gives an anesthetic. Pathology is the best and hardest externe work. The externe examines about one hundred, referring all doubtful tissues to Professor Zeit. A few postmortens come in this service. The third service of two months consists of dressing all pus eases. The pus man has forty or fifty cases to dress each day. He is not allowed in the operating room. After six months, the externes become juniors, and six mouths later, seniors. The junior now begins regular hospital work. He keeps complete records of all cases admitted, dresses clean cases, removes sutures, puts on easts and extensions. He is second assistant in all operations and serubs patients before operations. The senior takes his orders from the attending doeter each morning, and, in turn, directs the work of his assistants, viz., the externes and juniors, for whose work he becomes responsible. The surgeons make their rounds every day to private eases, but less often to the wards. The charity wards are left more largely to the interne. The senior is first assistant in most operations, and is generally given, by each regular operator, one or two major and many minor operations to perform. Each senior interne has seventy to minety patients on the surgical service, about fifty on the medical, and ten to twenty obstetrical. He makes his rounds morning and evening and notes condition of each patient. The senior medical interne has almost complete charge of his ward eases. In obstetries he delivers about two-thirds of the cases.

If the earlier work has been satisfactory, the attending men can make the senior work more valuable in many ways, by giving more operations and by allowing more freedom in treatment of cases. The two months' service arrangement gives the interne a chance to work with a large number of good men. On the other hand the staff men complain that, as soon as an interne is trained or can be of value, he goes on another service. The doctors all help the internes in every possible way, encourage them in their work, and extend them every courtesy. An interne can onjoy every day of his service and can make many friends, both

among patients and in the profession.

Dr. H. C. Woltman read a paper on the interne service of Cook County Hospital, Chicago. Synopsis: The resident staff of the hospital consists of thirtynine resident internes. Each interne serves three terms of six months each, or eighteen months in all. These terms are known as the junior, the middle, and the senior service. Each junior, at the beginning of his service, is assigned to a scnior for six months, and is under his supervision for that service. The work is very hard. The junior in the medical wards, for instance, is on duty from 8 a. m. till midnight. The patients are assigned to the seniors by rotation, the junior is notified of each new arrival assigned to his senior, and gives instruction for immediate treatment, such as bath, etc. He then wheels the patient's bed into the examining room, makes a thorough examination from head to foot, and writes a systematic history of the ease, family, personal, etc., together with the findings of the examination. This requires two hours on an average. This history becomes a part of the patient's hospital record. Writing histories is a great hardship, and eonsumes all of the junior's spare time, and even then he often finds himself in arrears with his work. If the patient dies and the body remains four days in the morgue a postmortem is held. Here the history, diagnosis and treatment are read and the findings compared therewith. This is the supreme test of the accuracy of the interne's work. Along with history writing in the junior medical service comes pathological work, as examination of urine, stomach contents, etc., requiring two to four hours in the laboratory every morning, and, on Wednesdays and Saturdays, he must assist at public postmortems. His time is very fully occupied. The second three months is his surgical service under the same senior interne. He spends from four to six hours each day in the dressing room, dressing the wounds of fifteen to thirty cases, with the help of two nurses. In this work he has to handle numerous injuries resulting from fights, holdups, policemen's clubs, etc. Many patients are drunk, and in an ugly mood. and resist treatment. Every sealp wound is shaved and laid open, in order that no skull fracture may escape detection.

The junior service, as a whole, means days of toil, and nights of labor. In addition to the routine drudgery of examinations, histories, dressings, etc., there are the poison eases, earbolie, gas, morphin, etc., scalds, burns, and erushing injuries of every variety; sunstroke in summer and frozen extremities in winter, all of which demand immediate attention. The patrolman sounds the gong, denoting an emergency, and dashes at full speed into the foyer, whence the patient is hurriedly transported to the ward, and treatment begun. These eases take precedence of all other work, and the routine work must be done later.

Beginning the middle service of six months, the interne enters a new field of activity. He spends six weeks as anesthetist for major operations; six weeks in the contagious ward; six weeks in the obstetrical ward, and six weeks in pathological work, attending every postmortem, seeuring specimens of every organ or tissue showing signs of disease. This, together with the junior work, brings him in contact with perhaps one hundred and fifty postmortems as a preparation for his senior work. He also serves by rotation in the receiving office with one other where every case is received, diagnosed and classified. Fifty to seventyfive apply each day for admission, and an incorrect diagnosis may be a serious matter, and upon the interne not only bring discredit but even suspension. When we consider the great number and variety of patients, many unable to speak English, many intoxicated or malingering, and the further fact that the diagnosis is disproved at all possible wards to which the patient is assigned, the difficulties of this work may be readily seen. The obstetrical ward yields about one birth each day. The male children are all circumcised, and the mother and child usually kept about three weeks.

The senior service is the most satisfactory of all. The senior interne has a junior at his command to do not only the routine drudgery, but to earry out any investigations he may see fit to order. He can arrange his own work to a certain extent and pay special attention to any subject he chooses. He now has an opportunity to experiment in treatment of cases, and attend the more important clinics. He has more freedom in treating patients than in a private hospital, as all are charity cases, and the attendant physician expects to be consulted only in extreme cases. He chooses the patients illustrative of different diseases for use by the clinician, and if he choose a specialty, can always find material for its study. Politics enters largely into the workings of the hospital. The attending physicians and surgeons get their appointment from the County Commissioners, and frequently influences other than professional ability serve to put a man on the attending staff.

Taken as a whole, the experience is well worth the effort, in spite of hard work, and the risk of infection, septic, syphilitie or tuberculous. It not only elinences the practical points of a physician's training and fits him to meet emergencies, but the constant association with forty other internes tends to make him more liberal and tolerant.

Dr. Potts:—Delicaey tends to forbid an ex-interne from fully stating the enormous benefit derived from an interneship in a large hospital. The examination of patients and the history writing is the most valuable training in this work. The benefit derived from interne work far exceeds that of his previous medical training. Responsibility in the elass room and in the hospital are very different. While more freedom is given in a public hospital, this advantage is more than outweighed by coming into eloser contact, in a private hospital, with the good men on the staff, being under their supervision, watching their methods, and being compelled to give due weight to the personal likes and dislikes of private patients as required in after practice.

PERRY COUNTY.

REPORT OF A CASE OF MULTIPLE NEURITIS.*

J. S. CLELAND, B.Sc., M.D.

SWANWICK.

K. C., male, aged 60, has always been a strong, hard-working farmer; never had any serious illness; did not use aleoholies habitually nor to excess; has been troubled at times for several years with pains in lumbar region, which incapaetated him from labor. These attacks were generally attributed to rheumatism. The present trouble began Oct. 15, 1905, with pains in the extremities and general soreness, such as usually attends la grippe. These pains increased in severity for the next few days, requiring the free use of aspirin, and morphin occasionally, to secure any degree of comfort for the patient. The origin of the pains was obviously in the nerve trunks and museles of the extremities, they being in a hyperalgesic condition. The sense of touch was found to be considerably impaired. Patient complained of a burning sensation in the feet. Some ædema and redness of the ankles were noted. After a few days paralysis of the extremities became quite evident and progressed until the use of the limbs was practically lost. The extensor muscles of forearm and leg were more affected than the flexors, though not to the extent of producing typical wrist-drop or foot-drop. Atrophy of the affected muscles and emaciation progressed rapidly. There was no involvement of bladder or reetum and urinalysis was negative. Bowels were generally eostive. Delirium was present for some time and dyspnea when patient was recumbent. During the second week the patient was troubled several days with dysphagia, which developed into an almost complete paralysis of the muscles of deglutition. Small quantities of somatose and tonic beef were administered with much difficulty. Medication was practically suspended for several days, when, fortunately, this distressing condition began to subside. The sensory symptoms improved rapidly from this time, in marked contrast with the motor symptoms and with eonvaleseenee, which in general was quite tedious. Patient has so far recovered as to be able to be around, but the muscles of the extremities are still considerably impaired and incapable of much exertion,

The diagnosis of multiple neuritis rests principally upon the combination of motor and sensory symptoms involving the same parts, atrophy and diminished electrical excitability. The gradual onset and wide distribution of the paralysis

are rather characteristic.

The prognosis, as stated by authorities, is good, except in eases due to alcoholism or toxemia. The majority recover almost entirely. Fatal results are generally due to paralysis of the heart or respiratory muscles or the entrance of food into the larynx, owing to anesthesia of the epiglottis and paralysis of the pharyngeal muscles.

Multiple neuritis requires differentiation from diseases affecting the spinal cord. Anterior poliomyelitis is characterized by the persistence of pains and other sensory symptoms, age, history, absence of tenderness in nerve trunks and symmetrical paralysis. Myelitis proper presents bladder and rectal involvement, increased patellar reflex and a more rapid onset and progress. In tabes dorsalis we find a less acute onset of paralysis, Argyll-Robertson pupil, Romberg symptom, ataxic gait, lightning pains and specific history. Spinal hemorrhage generally presents localized pain in the back. Neuralgia is usually unilateral in contrast with the bilateral nature of multiple neuritis.

The etiologic factors assigned by authorities and observers are quite numerous and diverse. In the case here reported no satisfactory causative agency has been discovered. Malaria and rheumatism have been considered as possible factors in producing the attack.

The following abstracts of reports from literature illustrate the diversity of the eauses assigned and some of the varied symptomatic manifestations of the disease:

Hart reports the case of a woman who had taken trional several years for insomnia, and who developed tingling in the arms, loss of knee jerks, hyperesthe-

<sup>Read at a meeting of the Perry County Medical Society.
Hart: American Journal of Medical Sciences, April, 1901.</sup>

sia, degeneration reaction in extensor muscles of the arms, delirium with hallucinations and later extreme general hyperesthesia, with gradual improvement and

finally complete recovery.

In H. Schwabe's case a man exposed to carbon dioxid became unconscious, weak, confused and delirious. Some time after recovering conscionsness, pain developed in the lower extremities and a sensation as if the legs were lost, followed by paralysis in the right leg and weakness in the right arm. Knee jerks were normal, with diminished ankle clonus and plantar reflex in the right leg. Optic nerve involvement with impaired vision was an unusual feature in this case.

Wharton Sinkler3 reports cases following the administration of arsenic and

lead, and septic multiple neuritis occurring after miscarriage and labor.

Stephenson' gives morphinism of twelve years' duration, or possible poisoning from the gold cure, as the causative factor in a case he describes.

Price's patient, a girl of 8 years, with symptoms of multiple neuritis, improved rapidly on administration of quinin. She had had malaria some time before the attack.

Jeliffc gives three cases caused by wood alcohol, two of which were due to breathing the fumes.

Pershing reports a case following ptomaine poisoning after the ingestion of lobster and stale beer.

Marsh and Smith⁸ give a detailed report of a case beginning with a slight pharyngitis, followed by two weeks of general weakness, no pain, but great nervousness, then seven weeks of pain, swelling and tenderness in the extremities, with hallucinations. The patient was free from pain one month, but developed inereasing mental difficulty and died after five days of high fever. The etiology in this case remained in doubt, though a number of possibilities were carefully considered.

The treatment of these cases is largely symptomatic and conditions must be met as they arise. Relief of pain is important and quite necessary during the acme of sensory disturbance. Aspirin, a salicylic acid ester, has been found very useful in relieving painful affections of this character. It appears to have a more pronounced analgesic effect than the coal-tar or other salicylie-acid derivatives, and can be administered in much larger dosage with less disturbance or depressing effect. Besides its anodyne qualities, it also has a curative effect in cases of rheumatic origin. Opiates may be added where a more decided anodyne effect is necessary. Strychnia is very useful as a stimulant and tonic. Elixir glycerophosphate compound forms a valuable tonic and reconstructive, especially during convales-The addition of more strychnia than the formula contains is generally desirable at this time.

PEORIA COUNTY.

The last month has been a jubilee month for the Peoria City Medical Society, as we have had Dr. McCormack and Dr. Sippy, of Chicago, at our meetings. The three meeting were very largely attended. The first meeting, on Tuesday evening, April 3, was held in the society rooms in the Observatory building, with the president, Dr. R. A. Kerr, in the chair. Those present were Drs. Collins. Hanna, C. E. Davis, E. L. Davis, Wallace, Bane, Floyd, Roskoton, Kelly, Brobst. Lucas, S. M. Miller, Bacon, Green, Barbour, Kerr, Allison, Will, Eckardt, Sidley and Plummer.

Dr. Collins presented a patient, 62 years old, from whom he had removed two-thirds of the stomach three and one-half weeks before. The patient had complained of stomach symptoms for about three years. He had occasional

^{2.} H. Schwabe: Muench Medical Woch., No. xxxix.

^{3.} W. Sinkler: American Medicine, June 18, 1904.

^{4.} Stephenson: New York Medical Journal, April 16, 1904.

Price: American Medicine, June 3, 1905.
 Jeliffe: Medical News, March 4, 1905.
 Pershing: American Medical, July 29, 1905.

^{8.} Marsh and Smith.: Boston Medical and Surgical Journal, Feb.12, 1903.

spells of cructations of gas with pain and vomiting during that time. When he was dieted he felt much better. A small ventral hernia was discovered in the median line just above the umbilicus, about one-fourth inch in diameter, through which protruded a small portion of the omentum. An examination of the stomach contents showed an increase in the amount of hydrochloric acid and an increase in the total acidity. There was no sarcine, no Boas-Oppler bacillus and nothing pointing to a stenosis in the pylorus. The hemoglobin was only 50 per cent. The ventral hernia might have eaused the pain and vomiting, but it did not explain the decrease in the amount of hemoglobin. No tumor could be felt through the abdominal wall. On account of the diminished hemoglobin an exploratory incision was made and a carcinoma 7 cm. in diameter was found in the middle of the lesser curvature. Fully two-thirds of the stomach was removed by the Mayo method and an anterior gastroenterostomy made with a Murphy button. The patient made an uneventful recovery. The button passed on the eighteenth day. The case was interesting because the examination of the stomach contents pointed more to ulcer than to carcinoma, and bore out the conclusions of William J. Mayo that an exploratory incision was necessary to diagnose the exact condition of the stomach. Dr. Collins presented the patient, a portion of the stomach that was removed with the carcinoma and a microscope with slides taken from the specimen. The society then listened to a very interesting paper by Dr. Collins, who read a paper on "Abdominal Incisions," in which he discussed the value of the various incisions with reference particularly to the blood vessels and trophie nerves. He described the transverse incision for pelvic work, which he had used in twenty-six cases. He had performed all the various pelvie operations through this incision, including two hysterectomies, and had removed the appendix in twenty-four of the twenty-six eases. The incision had proved adequate for all the various pelvic operations and gave a neat scar, concealed in a few weeks by the pubic hair.

That evening Dr. McCormack gave an address before a large and representative audience at the Women's Club, in which he talked not only to the members of the medical profession of the community, but to the clergy, local bar, school teachers, business men and general public. He urged on them the necessity of proper organization as a means of improving the condition of the profession and of increasing its influence for good in the community. He had a hearty welcome and we hope that his visit among us may be productive of great good to the profession and to the public.

The meeting of April 24 was held in the parlors of the Cottage Hospital. Dr. B. W. Sippy, of Chicago, gave a clinic before the society and presented several very interesting eases, which were at that time unable to leave the hospital. The meeting was one of the largest ever held in Peoria. Dr. Sippy presented four eases, the first one of multiple sclerosis in a girl of 23 years of age, with a history dating from the age of 19. The second case was one of carcinoma of the stomach, with a high grade of motor insufficiency. The third case was one of ulcer of the stomach, located at the pylorus. The fourth case was one of ulcer of the stomach, with a history of hyperacidity for thirty-seven years. Dr. Sippy presented these eases with his usual thoroughness and was given a vote of thanks by the society.

There being no further business to transact, the meeting adjourned until the following Tuesday evening, when Dr. Robert C. Bourland, of Rockford, Ill., will read a paper before the society.

On Wednesday afternoon, April 16, at 4 o'clock, the members of the medical society met in their rooms in the Observatory building and listened to a talk by Dr. McCormack on "What Can Be Accomplished by County Societies." The meeting was an exceedingly interesting one, as it gave the members an opportunity to meet Dr. McCormack. All the officers of the society were present, and on roll call the following members were found present: Drs. Roberts, Eckardt, Bacon, Floyd, Will, Gelder, Collins, Hinckle, Brobst, Wallace, Hayes, Wulstein, Dowdall, Kerr, Sidley, Lucas, Hasson, Sutton, Early, Cooper, Marcy, Green, Roskoton, Miller, Stephenson, Barbour, McFadden, Whitten, and seven visitors.

RANDOLPH COUNTY.

The quarterly inceting of the Randolph County Medical Society was held at Sparta, Tuesday, April 10, 10:30 a.m., in Dr. H. L. Gault's office. The chairman, Dr. C. G. Smith, of Red Bud, called the meeting to order. Roll call showed the following members present: C. G. Smith, A. D. Stecle, J. T. Russ, H. L. Saunders, Thomas Robertson, J. W. Robertson, J. W. Weir. Minutes of last meeting were read by the secretary, explaining the change of the former by-laws. A motion was carried to dispense with the regular rules by appointing a board of censors. The applications of new members were acted upon as they were handed in. They were Drs. F. A. Wnorowski, Stubsville; J. W. Robertson, Coultersville, and F. X. Sedlman, Bremen. The first paper on the program was read by Dr. J. T. Riess, "Should Physicians Prescribe Proprietary or Secret Preparations?" The paper brought out quite a lengthy discussion by all members present and some very interesting remarks. Dr. A. H. Meisenbach, of St. Louis, Mo., read a paper on "Cholelithiasis: Early Diagnosis and Treatment." Discussion followed by H. L. Gault and Thomas Robertson. Thomas Robertson, of Stubsville, read a paper on "Eclampsia" and reported four cases he had treated successfully by giving large doses of Norwood's tineture of veratrum viride internally and hypodermically and performing venesection on each with good results. Discussion followed by C. G. Smith, H. L. Gault, A. D. Steele, Dr. Guthrie, of Sparta, one of the oldest practicing physicians in the county, and Dr. T. S. Tibby, of Oakdale, Washington County, were present as visitors. A vote of thanks was tendered Dr. A. H. Meisenbach for his excellent paper, also to Dr. H. L. Gault, whose office we occupied during our meeting. The next quarterly meeting will be held in Evansville, July 10. A. D. Steele, Sccretary,

ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held Tuesday afternoon, April 10, 1906, at the Hotel Harms, Rock Island. Dr. G. L. Eyster, president of the society, presided. The minutes of the last meeting were read and approved. Drs. E. M. Minniek and R. R. Whiteside, both of Moline, were unanimously elected to membership. As this was the annual meeting of the society, election of officers took place and resulted as follows: President, F. H. Gardner, Moline; first vice-president, A. B. Hall, Rock Island; second vice-president, W. O. Beam, Moline; secretary, Ralph Dart, Rock Island; treasurer, J. E. Asay, Rock Island.

Dr. G. L. Eyster, the retiring president, was elected delegate to the state convention.

Dinner was served at 6:30 in the café, after which the meeting was again called to order and the society listened to a paper by Dr. Beam, entitled "Professional Fees and Their Collection." The secretary read a communication from Dr. Kreider, editor of the Illinois Medical Journal, relative to the medical defense fund. It was moved and seconded that our delegate be instructed to vote for the medical defense fund. After considerable discussion the motion carried. The meeting adjourned at 10:30. Thirty-three members were present. The next meeting will be held on the second Tuesday of June.

Ralph Dart, Secretary.

SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting in the Lincoln Library, May 14, 1906. There were thirty-five in attendance, including Drs. Harris of Chicago, Percy of Galesburg, and Ransom of Rockford. The minutes of the previous meeting were read and approved. The application of Dr. Roy F. Rogers for membership was read, and by vote of the society, the rules were suspended and the applicant elected to membership. Drs. Allen and Lockwood of Virden were elected as associate members.

A communication from the secretary of the Pike County Medical Society was received, with a resolution from that society, deprecating the action of the old line life insurance companies in reducing the fees of local examiners from \$5.00

to \$3.00. The secretary of this society was instructed to inform the Pike County Society that \$5.00 was the fee established by this society for such examination and was a part of our fee-bill. Dr. A. L. Brittin should have read the paper of the evening on "Fractures of the Femur, with Special Attention to Overlapping of Fragments and Laceration of Soft Parts." In his absence, the discussion was opened by Dr. Percy, who discussed, in general, the splints used in this class of fracture, and expressed a preference for the Verity splint, in most cases. He also spoke of the beneficial results of thyroid extract in fractures. Dr. Ransome related some very satisfactory experiences with the pneumatic ambulatory splint. Dr. Harris thought that the ambulatory splint had been overrated. He prefers a simple coaptation splint until the plaster can be applied. Dr. Dixon showed the Dixon modification of the Hodgens splint and illustrated its application. The meeting closed in order.

R. D. Berry, President.

C. R. Spicer, Secretary.

STEPHENSON COUNTY.

The second quarterly meeting of the Stephenson County Medical Society was held at the rooms of the Court House at 1 o'clock, April 23, 1906.

The society adopted the following resolutions:

"Resolved, That the Stephenson County Medical Society tender its eordial thanks to the Chicago Tribune for the generous and self-sacrificing war it is waging against adulterated foods and fraudulent proprietary and patent medicines, and pledge the support of its members to the Tribune."

Also the following resolution in regard to the medical legal defense fund was adopted:

"Resolved, That the Stephenson County Medical Society urge its members to agree to make no examinations for fraternal orders for less than \$2.00 or \$3.00, or for old-line insurance companies for less than \$5.00, and to make no answer to companies asking them to accept the reduction of fees."

The meeting then adjourned to the Grand Opera House, where an address was given by Dr. McCormack, the national organizer of the American Medical Association. The public meeting held by Dr. McCormack in Freeport at the Grand Opera House was certainly a great success. Owing to the antagonistic attitude taken by the superintendent of schools in regard to the meeting (though there were a number of the Board of Education in favor of dismissing the schools and allowing the teachers to attend), we were unable to secure the presence of the teachers. We greatly regret we were not able to have more of the public present, but our hour of meeting was somewhat out of the ordinary, it being at 1:30 in the afternoon. But in the evening, when Dr. McCormack gave his heart-to-heart talk to the physicians, we had a great number of physicians present, both from within and outside of the city, also a number of the clergy, and it certainly resulted in great good. We were particularly glad the ministers were able to hear Dr. McCormack's talk; it was apparently a great revelation to them as to the status of affairs and as regards the "patent medicines" and quack doctors, a number of whom are found in our city. Every one who heard him expressed the K. F. Snyder, Secretary. greatest satisfaction and appreciation.

VERMILION COUNTY.

The Vermilion County Medical Society met May 14, 1906. A committee eon-sisting of F. N. Cloyd, Solomon Jones and J. H. McIntosh, was appointed to aid the committee of the Children's Home Society of Chicago in attempting to establish a state colony for epileptics in Illinois. H. W. Morehouse offered a motion commending the action of the American Medical Association in appointing a committee on chemistry and pharmacy, which was unanimously earried. On motion it was decided to invite the Champaign County Medical Society to meet with the society in joint session on June 11, they to furnish one paper for the evening. The paper of the evening was by H. W. Morehouse, on Perinephritic Abscess, which brought out a general discussion, lead by J. M. Guy. Adjourned.

E. E. CLARK, Secretary.

NEWS OF THE STATE

Dr. L. E. Sherwood has located in Bowen.

Dr. William L. LeBoy, of Chicago, has located in Fairbury.

It is reported that there are several cases of smallpox in Decatur.

Dr. Newell, of Onarga, was in Chicago recently for some special study in surgery.

Dr. E. E. Gordon, of Cairo, is now in New York doing postgraduate work in medicine and surgery.

Dr. W. S. Strode, of Lewiston, will locate in Canton, forming a partnership with Dr. E. W. Reagan.

Dr. A. C. Staley, formerly of Farmer City, is now located in Chicago, with an office at 100 State Street.

Dr. George A. Denman returned to Tuscola, April 30, after having spent two weeks in Detroit, Toledo and other citics.

Dr. J. M. Beveridge, of Buckingham, has bought the practice of Dr. W. K. Farley, of Oregon. Dr. Farley will remove to Fulton.

Dr. McLafferty, of Aledo, will soon remove to Portland, where he has been elected chief physician of the Portland Sanitarium and Hospital.

A case of smallpox was discovered recently at 1918 Wabash Avenue, Chicago. The patient was taken at once to the isolation hospital, the place fumigated, and the people who had been exposed were vaccinated.

Three hundred and eighty persons took part in the grand march at the annual dance given by the freshmen, sophomore and junior classes of the Dearborn Medical College to the senior class, which was held in the Coliseum on the night of May 1.

Dr. P. H. Barton, Danville's oldest practicing physician, was found unconscious on the floor of his office following a stroke of paralysis. Dr. Barton is 70 years old and has practiced medicine for forty years. Owing to his age it is feared he can not recover.

Vincenzo Colletta, a druggist at Polk and Clark Streets, and Dr. Adolph C. Brendecker, another pharmacist at West Randolph and Peoria Streets, were arrested at the instigation of the Hull House authorities for selling cocain without a physician's prescription.

Dr. W. E. Taylor, superintendent of the Western Hospital for the Insane at Watertown, has been appointed by Governor Deneen a delegate to represent Illinois at the National Conference of Charities and Correction, which meets at Philadelphia, May 16 and 17.

Dr. Thomas L. Gilmer, of Chicago, accompanied by a party of eight friends, will journey from Oshkosh, Wis., to Chicago in a forty-five-foot cabin cruising launch. The boat will be provisioned for a month's cruise, but it is expected to make the trip in about two weeks.

The police ambulances of Chicago are to be given over to the City Health Department within a few days, in accordance with the plans of Health Commissioner Whalen and Chief of Police Collins. Each of the cight ambulances will be under the charge of a physician.

Dr. G. M. Guiteras, of the United States Marine Hospital, suggests that the Health Department of Cairo, Ill., should cover the ponds in the vicinity with oil to stop the breeding of mosquitoes. This, it is thought, would decrease the malarial conditions and greatly improve the health of the people of the city.

The smallpox reported at Zion City threatens to become epidemic unless proper precautions are taken. Dr. James E. Egan, of Springfield, secretary of the State Board of Health, will insist upon strict compliance with the quarantine and vaccination rules and will detail an inspector to be stationed at Zion City.

A faculty farewell dinner was given to Dr. Palmer Findley, assistant professor of gynccology and obstetrics of Rush Medical College, on April 26, at the Auditorium Annex, on the occasion of his departure from Chicago to take the position of professor of gynecology in the Omaha Medical Department, University of Nebraska.

Dr. A. Judson Booth, tried in Judge Kersten's court, Chicago, on charges made by five girls, all under 16 years of age, who are at present in the Chicago Woman's Refuge, was found guilty by the jury and sentenced to eighteen years in the penitentiary. The motion for a new trial was made. Booth had offices at Robey Street and Evergreen Avenue and at 51 LeMoyne Avenue.

A motion for a new trial in the case of Dr. Charles A. Nichols, a prominent physician of Urbana, has been denied by Judge Humphrey in the United States District Court. The charge brought against Nichols was that of using the mails to defraud Mrs. Susan Day, of Urbana. He was fined \$250 and costs, with imprisonment until paid, the total amount being \$1,700, which Nichols will pay.

Health Commissioner Charles J. Whalen's ordinance for a new division in the health department, to be called the bureau of food and meat inspection, has been recommended by the council health committee for passage. All the positions will be under civil service. The committee also recommended for passage an ordinance for a license fee of \$25 and inspection of restaurants by health officials.

Members of the family of Dr. Camillo Volino, 946 Flournoy Street, Chicago, a well-known Italian physician, deny the report that the doctor is dying from blood poisoning caused by a scratch received on his arm during an operation which he performed recently. The attending physician states that the condition of his patient is not at all alarming and that he will be in good condition within a week.

Investigation into the manner of the death of Mrs. Ruth Cantel, wife of Overseer H. E. Cantel, of Zion City, has been demanded by her brother, Harry Stevens, of Paso Robles, Cal., and it is possible that Mrs. Cantel's body will be exhumed for a postmortem examination. Mrs. Cantel died in great agony recently without medical attendance. The ease is creating much excitement in Zion City.

The life of Dr. L. A. Mueller, 306 Division Street, Chicago, was imperiled a few days ago by three shots which were directed at him through the window of his office. Owing to the refusal of Dr. Mueller to discuss the matter, the name of the assailant has not been made public. In the office of another physician near by the shells of three empty cartridges corresponding in ealiber to the bullets fired were found.

Mrs. Eva Bergquist Selders, 1556 Milwaukee Avenue, Chicago, was arrested recently, suspected of having performed an illegal operation upon Mrs. Annie Hagman, 977 North Rockwell Street, which resulted in the woman's death. Dr. Selders was directed to appear at the inquest upon the body of Mrs. Hagman, but failed to do so. The matter was reported to the police and her arrest followed. She will be held pending further investigation of the ease.

With but one exception this year the fewest number of deaths from consumption were reported during the week ending May 12. In the week of February 14 only 53 such deaths were reported. This week there were only two more, or a total of 55. The weekly average since the first of the year has been 65; during the corresponding period last year there were 1,715 deaths from consumption reported, a weekly average of 90. In most other respects the health conditions are fairly satisfactory.

The Illinois Training School for Nurses celebrated its twenty-fifth anniversary May 3 at the Chicago Woman's Club, Fine Arts Building. Of the twenty-five charter members of the board, nine are still among the directors. Since its establishment 876 nurses have graduated from the school. At its organization the school had two wards in Cook County Hospital. It now has charge of Cook County Hospital proper, the Children's Hospital, contagious hospital, and also sends some nurses to the Chicago Lying-in Hospital.

Dr. Nieholas Kern, of Thawville, and Dr. Carson, of Chatsworth, have been indicted by the grand jury in Paxton for murder in performing a criminal operation on Miss Nellie Clark. They were released under \$10,000 bonds, the date of their trial being fixed for June 5. Prominent lawyers have been engaged for the ease, among them being Attorney Samuel Alsehuler, former candidate for governor of Illinois. The trial promises to be one of the most noteworthy that has taken place in central Illinois for several years.

It is reported that the directors of the Lincoln Hospital, 500 La Salle Avenue, Chicago, have forced Dr. Henderson, the medical superintendent, to resign. The directors charge a shortage in the accounts of from \$1,000 to \$5,000 and allege that at a time when there were only three patients in the hospital the debts had reached \$2,500. Expert accountants

have been put on the books and a statement is expected soon. Dr. Henderson elaims that the hospital owes him \$1,000 which he loaned it. He has been succeeded by Dr. H. E. Coger.

In the ease of Dr. C. N. Hazelton, of Morrison, who brought suit against Dr. W. B. Carolus, of Sterling, for \$4,500, a verdiet was rendered in favor of the defendant. Dr. Hazelton sued for this amount on the grounds that when Dr. Carolus sold him \$3,750 worth of Eureka eopper stock he agreed to take it back and refund the money should it prove an unsatisfactory investment for the purchaser. Dr. Carolus denied ever having made such a proposition. The case was strongly contested and the attorneys for Dr. Hazelton have announced that they will carry it to the higher courts.

The Home for Destitute Crippled Children, of which Dr. John Ridlon is surgeon in charge, has recently completed a new building at a total cost of about \$40,000. Mrs. R. H. McElwee donated \$25,000 for the construction of the out-patients' department, which is erected as a memorial to her daughter. The home is located at 46 Park Avenue, corner of South Paulina Street. It is equipped with all the modern conveniences for the care and development of crippled children, including baths, playroom, roof garden, gymnasium, x-ray, plaster and brace manufacturing room and a modern operating room.

The appeal for eheaper antitoxin to save the lives of hundreds of children who contract diphtheria has been answered. Dr. Heman Spalding, ehief medical inspector of the city, hopes it will not be long before the remedy is within the reach of even the poorest citizens. The McCormiek Memorial Institute for Infectious Diseases is supplying the city with antitoxin at less than half the price charged by the so-called "antitoxin trust." The preventive also is being supplied to the Cook County Hospital. The antitoxin is manufactured by the endowed institution on a farm in the outskirts of the city. Dr. Ludvig Hektoen, Prof. E. O. Jordan and Dr. George Weaver are in charge of the work.

The hospital of the Illinois Steel Company may be closed by the police unless it complies with the law. The police claim that the institution does not report serious accidents, that it is being operated without a city license. It is stated that no monthly report is ever made of admissions, discharges and deaths to the health department, as provided by the city ordinance. The Illinois Steel Company has maintained that the hospital is a private institution and, therefore, could be operated as it pleased. Corporation Counsel J. Hamilton Lewis warned the corporation two months ago that it would have to comply with the ordinance and take out a license, but no step has yet been taken in that direction.

The Chicago Union Hospital has asked the Circuit Court to restrain Commissioner of Buildings Bartzen and Chief of Police Collins from interfering in the erection of a new hospital building at Wellington Avenue and Dayton Street. Work on the structure has been ordered stopped on the ground that the building as being erected is in violation of a city ordinance which forbids a hospital within 400 feet of property used for

public school purposes. It is declared that this building is within 400 feet of the Robert Morris School, Barry Avenue and Bissell Street. In the injunction filed in behalf of the hospital it is admitted that the building being erected is within 340 feet of the school property line, but more than 400 feet away from the school building.

JOINT MEETING.

There will be a joint meeting of the Aux Plaines Branch of the Chicago Medical Society and the Fox River Valley Association, the component society for Kane and McHenry counties, at the Courthouse, Wheaton, Ill., June 20, 1906, at 10 a.m. All physicians are cordially invited to attend. Dr. James W. McDonald, of Aurora, will read a paper at the morning session on "Injuries to the Brain." Dr. Ellis K. Kerr, of Oak Park, will read a paper in the afternoon on "Diagnosis of Carcinoma of the Stomach." Dinner will be served by the ladies of the Congregational Church at \$1.00 per plate.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of May the following members of the Illinois State Medical Society became members of the American Medical Association:

Barryte, Evan, L., Chicago.
Ballinger, J. R., Chicago.
Bingley, M. A., Chicago.
Burr, Albert H., Chicago.
Coff, Weller H., Paris.
Davis, David John, Chicago.
Dodge, W. E., Chicago.
Edwards, Frank H., Chicago.
Fisher, W. D., Chicago.
Garwood, J. P., Princeton.
Howe, Harriette A., Chicago.
John, F. D., Chicago.

Jones, Martin D., Chicago.
Lee, W. George, Chicago.
Lane, Robt. Nelson, Danville.
Murphy, N. A., Paris.
Patton, Charles L., Springfield.
Sedlmair, Frank H., Bremen.
Van Dersliee, James Warren, Chicago.
Vopata, W. J., Chicago.
Whitmer, L. W., Chicago.

Wood, Henry Willis, Sheldon.

MARRIAGES.

Maurice B. Wolff, M.D., Chieago, to Miss May Steiner, of St. Louis, May 15.

Paul J. Burrell, M.D., Winslow, Ill., to Miss Leda Smith, of Cadiz, Miss., recently.

Frank E. Hicklin, M.D., La Salle, Ill., to Miss Mary Fiekle, of Sandwieh, Ill., April 11.

DEATHS.

Michael A. Glennan, M.D., Rush Medical College, Chicago, 1878, died at his home in Ludlow from kidney disease April 11.

William Osborne, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1882, died at his home in Chicago, April 19.

Herman Kirschstein, M.D., University of Breslau, Germany, one of the oldest German physicians of Chicago, died at his home, April 29, aged 77.

J. G. Porter, M.D., Chicago Homeopathic Medical College, 1899, of Clinton, died in Hahnemann Hospital, Chicago, April 24, after a surgical operation.

Howard R. Weber, M.D., University of Maryland School of Medicine, Baltimore, 1886, formerly of Highland, Ill., died at the Illinois Southern Hospital for the Insane, Anna, April 26.

Robert N. Rickey, M.D., Rush Medical College, Chicago, 1869, while despondent on account of ill health, committed suicide by taking morphine at his home in Gray's Lake, Ill., April 30, aged 55.

Naomi A. Pierce Collins, M.D., Women's Medical College, Chicago, 1885, for many years a practitioner of Decatur, Ill., died at her home in Mahomet, Ill., May 3, after an illness of several weeks, aged 44.

Ralph R. Thompson, M.D., Medical College of Indiana, Indianapolis, 1900, of Mooresville, Ind., examining surgeon for the relief department of the Pennsylvania Railroad in Chicago, died at the Gault House in that city, May 4, from acute nephritis, aged 31.

Frederick J. T. Fischer, M.D., Medical College of Ohio, Cincinnati, 1878, a member of the Illinois State Medical Society and the DuPage County Medical Society, a veteran of the Civil War, died suddenly at his home in Elmhurst, Ill., April 27, aged 63.

Arthur Burley Hosmer, M.D., Chicago Medical College, 1876; grandson of Dr. Isaac Harmon, who was the surgeon on duty at old Fort Dearborn; a member of the American Medical Association, Illinois State and Chicago Medical societies, American Orthopedic Association. Association of Military Surgeons of the United States; ex-president of the Chicago Orthopedic Society; professor of orthopedic surgery in the Chicago Polyclinic; orthopedic surgeon to St. Luke's Hospital; one of the most prominent and well-known orthopedic surgeons of Chicago, who devised several valuable forms of orthopedic appliances, notably the flat-foot plate which is known by his name, died at his home in Chicago, May 5, from pneumonia, after an illness of eight days, aged 62.

CHANGES OF ADDRESS MADE BY THE STATE BOARD OF HEALTH FROM FEB. 10, 1906, TO MAY 10, 1906.

Aby, Frank Staunton, from * to Nunda, McHenry County, Ill.

Alrutz, Louis Ferdinand, from * to 2131 West Monroe Street, Chieago.

Armstrong, Jay L., from * to 481 Wabash Avenue, Chicago.

Anderson, Carolus H. R., from * to 1106 Republic Building, Chicago.

Artin, A. S., from * to Springerton, White County, Ill.

Auter, Milton H., from 1818 Darrow Avenue, Evanston, to 1721 Benson Avenue, Chicago.

Avery, Wilbur M., from Compton, Lee County, to Pawpaw, Lec County.

Backhusen, H. R., from * to 535 Belmont Avenue, Chicago.

Backus, John B., from * to 5701 Monroe Avenue, Chicago.

Baker, Nellie M., from Onargo, Iroquois County, to Urbana, Champaign County. Baldwin, Floyd McK., from Muskegon, Mich., to 192 East Superior street, Chicago. Barelay, Robert Donaldson, from Altamont, Effingham County, to 3551 Calumet

Avenue, Chicago.

Barelay, Robert D., from 3551 Calumet Avenue, Chicago, to Cerro Gordo. Piatt County.

Barker, Frank M., from * to 1072 Sheridan Road, Chicago.

Barlow, Nathan, from St. Louis, Mo., to Lebanon, Ill.

Barlow, Nathan, from Lebanon, St. Clair County, to Murphysboro, Jackson County.

Bamberger, George Washington, from * to 4744 Champlain Avenue, Chieago. Bassett, Vietor Hugo, from Baltimore, Md., to 5809 Jackson Avenue, Chieago.

Beard, Charles H., from 34 Washington Street, Chicago, to 605 Venetian Building, Chicago.

Beedy, Lora L., from * to 808 Pratt Avenue, Chicago.

Benner, Charles Russell, from Emmington, Livingston County, to 1300 West Sixty-third Street, Chicago.

Beveridge, James M., from Buckingham, Kankakee County, to Oregon, Lee County. Bibb, Merwyn R., from * to 2900 State Street, Chicago.

Binkley, John T., Jr., from * to 408-92 State Street, Chicago.

Blair, James H., from Aron, S. D., to 3633 Ellis Park, Chicago.

Blanchard, John A., from Cobden, Union County, to Cairo, Alexander County.

Blouke, Milton B., from 1222 Washington Boulevard, Chicago, to suite 827 Marshall Field Building, Chicago.

Bonine, James Gordon, from * to 904 Masonie Temple, Chicago.

Briney, William F., from 130 Dearhorn Street to 182 State Street, Chicago.

Brown, John Bernard, from 408 West Sixty-first Street to 549 West Sixty-third Street, Chicago.

Brown, Riehard H., from 70 State Street, Chicago, to Centralia, Marion County. Brown, Roy Earl, from 103 State Street, Chicago, to Washington Courthouse, Ohio.

Brugge, H. J., from * to 1997 West Polk Street, Chicago.

Buneh, Rollin H., from Muncie, Ind., to 234 Ashland Boulevard, Chicago.

Byers, E. M., from Poplar Grove, Boone County, to Belvidere, Boone County.

Campbell, Amos W., from * to 108 Fifth Avenue, Chicago.

Carper, Daniel W., from Henning, Vermilion County, to Seymour, Champaign County.

Carr, James Gray, from * to 918 West Twenty-second Street, Chicago.

Carr, Jesse Myron, from Lineoln, Neb., to 516 West Fulton Street, Chicago.

Carroll, Ellsworth J., from Pontiae, Livingston County, to Quiney, Adams County. Cater, Gatta M., from * to Morton Park, Cook County.

Cavanaugh, John Algeron, from * to Sherman House, Clark and Randolph Streets, Chicago.

Cessna, Charles E., from Park Ridge, Cook County, to 160 Washington Street, Chicago.

Christian, Albert D., from Freedom, La Salle County, to Seneca, La Salle County.

Claucey, Cornelius L., from * to 1206 Lawrence Avenue, Chicago.

Clark, John Shelton, from Mount Carroll, Carroll County, to 227 W. Adams Street, Chicago.

Clendenen, Irving, from Maywood, Cook County, to 70 State Street, Chicago.

Cline, Corles B., from Mausfield, Piatt County, to Peoria, Peoria County.

Collier, William, from 1701 West Sixty-third Street, Chicago, to 486 Sixty-third Street, Chicago.

Collyer, Albert Edward, from 524 West Madison Street, Chicago, to Lee, DeKalb County.

Corbus, B. Clark, from * to 800, 109 Raudolph Street, Chicago.

Craven, William C., from 84 La Salle Street, Chicago, to Nunda, MeHenry County.

Dale, William Henry, from * to 5 Langley Place, Chicago.

Damm, Eugene Francis, from * to 192 North State Street, Chicago.

Davis, David John, from * to Rush Medical College, Chicago.

Day, L. A. L., from 59 State Street, Chicago, to 55 State Street, Chicago.

Deason, Frank, from De Soto, Jackson County, to Bush, Williamson County.

De Courcy, James O., from East St. Louis, St. Clair County. to Mascoutah, St. Clair County.

De Pew, C. Chauncey, from La Salle, La Salle County, to Ottawa, La Salle County. Dodson, Charles A., from Park Ridge, Cook County, to Glenview, Cook County.

Doering, Edmund J., from 2458 Indiana Avenue, Chicago, to Lakota Hotel, Chicago.

Dolder, Felix C., from Joliet, Will County, to 7526 Ellis Avenue, Chicago.

Dryden, William F., from Galva, Henry County, to *.

Duane, Joseph F., from Peoria, Peoria County, to Vienna, Austria.

Dugan, Richard D., from Illiopolis, Sangamon County, to Galesburg, Knox County.

Dugan, W. J., from Lovington, Moultrie County, to Galesburg, Knox County.Durkee, Alvara C., from Pontiac, Livingston County, to Danville, Vermilion County.

Eales, Irving J., from Belleville, St. Clair County, to 1180 Washington Boulevard, Chicago.

Eastman, Eugene H., from * to 5557 Monroe Avenue, Chicago.

Egan, James C., from Hanover, Jo Daviess County, to 939 Sunnyside Avenue, Chicago.

Ellsworth, Elmer Harvey, from Hot Springs, Ark., to 503 West Adams Street, Chicago.

Elmore, Sidney, from Samoth, Massae County, to Metropolis, Massac County.

Farley, William K., from Oregon, Ogle County, to Fulton, Whiteside County.

Fowler, Charles A., from Malta, DeKalb County, to Oregon. Fowler, Fred Hill, from * to 4725 Calumet Avenue, Chicago.

Frizelle, Clifton H., from La Salle, La Salle County, to Dixon. Lee County.

Galbraith, George Herbert, from Herrin, Williamson County. to Clifford, Williamson County.

Gann, Joseph Henry, from Grantsburg, Johnson County, to Samoth, Massac County.

Gibson, Sadie F., from Bowling Green, Ky., to 2811 Groveland Avenuc, Chicago.

Gorman, Henry, from Belle Plain, Marshall County, to Sedgwick, Kas.

Grassau, Andrew, from Apple River, Jo Daviess County, to Galena, Jo Daviess County.

Gray, Philip M., from 2267 North Paulina Street, Chicago, to Cisne, Wayne County.

Greaves, Joseph Ainsworth, from 669 Madison Street, Chicago, to Marseilles, La Salle County.

Greeg, Mary E., from Riverside, Cook County, to 1925 Kenmore Avenue, Chicago, Green, Fred R., from 6312 Greenwood Avenue to 103 Dearborn Avenue, Chicago.

Green, Ralph E., from 550 Wilson Avenue, Chicago, to Fontanelle, Iowa.

Habenicht, John, from Wilmont, Minu., to 993 South Troy Street, Chicago.

Halbert, William A., from Salisbury, Sangamon County, to Springfield, Sangamon County.

Hall, Walter S., from Berwyn, Cook County, to 2431 Dearborn Street, Chicago.

Hanawalt, C. G., from Lisbon, Kendall County, to 352 La Salle Avenue, Chicago.

Hanawalt, C. G., from 352 La Salle Avenue to 536 Dearborn Street, Chicago.

Hardt, Harry G., from Jacksonville, Morgan County, to Elgin, Kane County.

Harrison, Edward M., from * to 1104, 42 Madison Street, Chicago. Hart, William E., from * to 786 East Seventy-second Street, Chicago.

Hayward, Charles E., from Cropsey, McLean County, to Stuttgart, Ark.

Heath, Frederic C., from * to 572 Milwaukee Avenue, Chicago.

Hendricks, Earl L., from Stillman Valley, Ogle County, to Lanark, Carroll County. Henning, Harry Hugh, from 1502 Edgewort Place, Chicago, to Plano, Kendall County.

Herzman, Morris, from 337 West Eighteenth Street, Chicago, to La Salle, La Salle

County.

llerzman, Morris, from La Salle, La Salle County, to Kewanee, Henry County.

Higgins, James D., from 930 Walnut Street, Chicago, to Huntley, McHenry County. Higgs, John I., from Coulterville, Randolph County, to East St. Louis, St. Clair County.

Hillebrand, Christian, from Freeport, Stephenson County, to Waubay, S. D.

Holsteen, W. F., from 92 State Street to 488 East Sixty-third Street, Chicago.

Howe, Lyston D., from Blackstone, Livingston County, to Arizona.

Hubbard, Orton, from Wesley Hospital, Chicago, to Parsons, Kas.

Jennings, M. C., from * to 2239 Wentworth Avenue, Chicago.

Johnson, John A., from McLeansboro, Hamilton County, to Dale, Hamilton County. Johnson, Silas Curtis, from Rensselaer, Ind., to 5260 Wabash Avenue, Chicago.

Jones, John Branson, from Waynesville, De Witt County, to Wapella, De Witt County.

Jones, Nathan A., from Mount Pulaski, Logan County, to Plainview, Macoupin

Kane, H. H., from * to 267 Michigan Avenue, Chicago.

King, Charles Dilworth, from Will, Montgomery County, to Gillespie, Macoupin County.

Klick, John Joseph, from 276 Ogden Avenue, Chicago, to Presbyterian Hospital, Chicago.

Knudson, F. B., from 389 West Erie Street to 1470 North Troy Street, Chicago.

Kranz, Frank J., from 15 Mantene Court, Chicago, to 707 Milwaukee Avenue,

Kunkler, Joseph Everett, from Bloomington, McLean County, to Clinton, Mo.

Lane, Robert Nelson, from Lisbon, Kendall County, to Danville, Vermilion County. Lee, William George, from 77 East Twentieth Street to 1897 Kenmore Avenue, Chicago.

Leeds, Norman, from Bellmont, Wabash County, to Canal Zone, Central America. Little, Perry M., from Janesville, Cumberland County, to Willisville, Perry County. Magahy, Charles Alford, from 1310 Dakin Street, Chicago, to Diamondville, Wyo. Manchester, Howard D., from Farmington, Fulton County, to Yates City, Knox County.

Martin, Frederick H., from * to Libertyville, Lake County.

May, Leonidas J., from Anna, Union County, to Cobden, Union County.

McCord, William Charles, from 625 Adams Street, Chicago, to Mars, Pa.

McDermon, Edward W., from 497 State Street, Chicago, to Mucogee, I. T.

McGinnis, Edwin, from 830 West Sixty-third Street, Chicago, to Orland, Cook Count v.

McGuinn, James J., from * to 66 Rush Street, Chicago.

McLean, William H., from Farmersville, Montgomery County, to St. Lonis.

Mitchell, Robert Sanford, from Mercy Hospital, Chicago, to Red Cloud, Neb.

Mortensen, M. A., from Springfield, Sangamon County, to *.

Mullins, J. Melvin, from Fairbury, Livingston County, to 147 State Street, Chicago, Munson, Henry O., from Rushville, Schnyler County, to Alellen, N. M.

Murray, John, from Carbon Hill, Grundy County, to Cuba, Fulton County.

Myers, Louis Winfield, from Elgin, Kane County, to Westhope, N. D.

Norris, Frank A., from Mercy Hospital, Chicago, to Jacksonville, Morgan County.

Orglert, Maria T., from * to 222 Cornell Street, Chicago.

Osbaldeston, Julian T., from 3248 Rhodes Avenue, Chicago, to Indianapolis, Ind.

O'Shay, Frank J., from Braidwood, Will County, to Essex, Kankakee County.

Ostberg, Niles W., from 4305 Oakenwald Avenue, Chicago, to Minneapolis, Minn.

Parker, Charles Eugene, from Sterling, Whiteside County, to Harmon, Lee County. Parmlee, Olin Earl, from 445 East North Avenue, Chicago, to Lambertville, Mich. Pease, Bert Charles, from Kirkwood, Warren County, to 1628 West Harrison

Street, Chicago.

Peterson, Enoch Fred, from 427 West Congress Street to 1206 Lawrence Avenue, Chicago.

Phemister, Dallas B., from Cook County Hospital to La Grange, Cook County. Phillips, Charles Eaton, from St. Charles, Kane County, to Colon, Panama.

Pierce, Frank E., from 4801 Forrestville Avenue, Chicago, to 100 State Street, Chicago.

Quick, Edward William, from Cook County Hospital to Appleton, Wis.

Quinn, John Joseph, from 166 La Salle Avenue to 83 East Fullerton Avenue, Chicago.

Rembe, C. H. E. E., from Maseoutah, St. Clair County, to Lincoln, Logan County. Reno, Clarence G., from Lacon, Marshall County, to Streator, La Salle County.

Ricardo, Daniel, from 547 La Salle Avenue to 4456 Calumet Avenue, Chicago. Rice, Paul Frederick, from 105 South Central Av., Chicago, to Cannonball, N. D.

Riffey, James Henry, from * to Girard, Macoupin County.

Roberts, Harold H., from Wesley Hospital, Chicago, to Maywood, Cook County.

Roberts, Ira T., from Longmont, Colo., to Johnson City, Williamson County.

Rockey, Amos P., from Los Angeles, Cal., to Assumption, Christian County.

Rose, P. W., from St. Louis to Granite City, Madison County.

Rosenblith, Henry, from 359 West Twelfth Street, Chicago, to 924 South Ashland Avenue, Chicago.

Rothroek, Wilburn Joseph, from 309 Fifth Avenue, Chicago, to Las Vegas, N. M. Roy, David Grant, from 5119 Dearborn Street, Chicago, to Braceville, Grundy

Runkle, George D., from Summum, Fulton County, to Industry, McDonough County.

Scalefe, Benjamin F., from Sailor Springs, Clay County, to 4036 Russell Avenue, St. Louis.

Schulze, Leonard C., from 796 Flournoy Street, Chicago, to 1558 West Madison Street, Chicago.

Schulze, William C., from * to 126 State Street, Chicago.

Seebold, John L., from * to Madison, Madison County.

Seymour, Ernst de Lacey, from Dwight, Livingston County, to Blackstone, Livingston County.

Simonton, Albert H., from * to 4360 Milwaukee Avenue, Chicago.

Simmons, Margaret E., from * to 3815 Rhodes Avenue, Chicago.

Sisson, Charles E., from Huntley, McHenry County, to Elgin, Kane County. Smith, G. B., from Brussels, Calhoun County, to Fieldon, Jersey County.

Snarely, John Louis, from Hahnemann Hospital, Chicago, to Sterling. Whiteside County.

Spencer, William Barton, from * to 879 Lake Street, Chicago.

Spurgeon, Glen Charles, from 302 Maxwell Street, Chicago, to Chicago Baptists Hospital, Chicago.

Strohl, Harley, from Waggoner, Montgomery County, to Farmersville, Montgomery County.

Tannus, Ferris, from Clinton, De Witt County, to Mackinaw. Tazewell County.

Tate, Louis Neill, from Milwaukee, Wis., to Carthage, Hancock County.

Terry, Harry Alfred, from St. Louis, Mo., to Tampieo, Whiteside County. Thornton, William T., from 28 Thirty-third Place to SSS Thirty-fifth Place. Tracy, Evert E., from 34 Washington Street, Chicago, to Prairie View. Lake Connty.

Truitt, Frank L., from Noblesville, Ind., to Luzern Hotel, Chicago. Truitt, Frank L., from Luzern Hotel, Chicago, to Noblesville, Ind.

Van Meter, Eugene R., from Lincoln, Logan County, to Elkhart, Logan County.

Von Langan, Caroline M., from * to 2457 Wentworth Avenue, Chicago.

Wachowski, John G., from 4647 South Ashland Avenue to 1835 West Forty-seventh Street, Chicago.

Was, Frank Peter Jacob, from 422 West One Hundred and Sixth Place, Chicago, to Grand Rapids, Mich.

Weth, Stephen Stafford, from 302 Millard Avenne, Chicago, to 326 North Sixty-fourth Avenue, Oak Park, Cook County.

Whare, George B., from Joliet, Will County, to Madison, Wis.

Wheeler, George W., from Prophetstown, Whiteside County, to Paxton, Ford County.

Willits, Ira Raymond, from Kcithburg, R. F. D., Mercer County, to 5358 South Morgan Street, Chicago.

Winsett, Clifford Vana, from Iowa to 733 South Lawndale Avenue, Chicago.

Wooley, Ida M., from * to Decatur, Macon County.

Zook, Erle W., from Dunlap, Peoria County, to Peoria, Peoria County

^{*} Outside Illinois or address unknown.

Cystogen-Lithia

Effervescent Tablets of {Cystogen 3 grains Lithium tartrate 3 grains

Uric acid Solvent, alkaline urinary antiseptic.

DOSE—One or two tablets in a glass of water, three or four times daily. They should be dispensed in the tubes to preserve the effervescent property.

Where Cystogen is indicated, Lithia is of advantage; Where Lithia is prescribed, Cystogen is indicated.

Indications—Rheumatism, gout, urinary deposits, calculus, cystitis, prostatitis and gonorrhoea. A good urinary antiseptic during convalescence from typhoid and scarlet fever.

CYSTOGEN CHEMICAL CO., St. Louis, U. S. A.

CYSTOGEN PREPARATIONS:

Cystogen—Crystaline Powder.
Cystogen—5-grain Tablets.

SAMPLES ON REQUEST.

Cystogen-Lithia (Effervescent Tablets)
Cystogen Aperient (Granular Effervescent Salt
with Sodium Phosphate.)

CL4



Natural digestive and laboratory experiments have established the interesting fact that HIGHLAND BRAND EVAPORATED CREAM is more easily digested than either raw, pasteurized or boiled milk. The protein is precipitated in a fine flaky condition, while that of raw milk is inclined to be more in the form of a lumpy curd. The butter-fat and milk sugar are both very completely digestible and assimilable and the total energy of Highland Brand Evaporated Cream is almost entirely available.

HIGHLAND BRAND EVAPORATED CREAM is the logical substitute food for infants

Where modification is desired, either simple or with prepared cereals, it can be as easily attained as with raw milk, and there is always the satisfaction of knowing that here is a milk free from germ life. Under most conditions all that is necessary is to add boiled water with pure cane sugar in sufficient quantity as indicated by the age of the infant. Literature and samples on request.

HELVETIA MILK CONDENSING CO, HIGHLAND, ILL.





